PLA 2.0 User Manuals

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(Version 0.90, 2006-08-16)

Welcome to PLA 2.0

PLA 2.0 is a software package for the development and analysis of Parallel-Line Assays and Parallel-Logistics Assays. The following keywords describe the options of PLA to give a short summary:

Statistical Features

- **Parallel-Line Assay**
- Four Response Transformations for Parallel-Line Assays
- Configuration Optimization for Parallel-Line Assays
- **Parallel-Logistics Assays based on 4- and 5-Parameter Fit**
- Four Outlier Detection Methods (Optional)
    - Dixon Test for Data Outliers
    - Grubb's Test
    - Standard Deviation Test
    - (Externally) Studentized Residuals
    - Manual Removal as Technical Outliers
- ANOVA Models
    - Separate ANOVAs (PLA 1.2 compatible)
    - ANOVA based on Pure Error Separation (European Pharmacopoeia)
    - ANOVA based on Residual Error
- Test of Parallelism
    - F-Test
    - Equivalence Test based on Ratio of Slopes
    - Equivalence Test based on Difference of Slopes
- Combination of Assay Results
- Raw/Bulk Material Potency Calculations
- Stock Solution Potency Calculations
- Assigned / Assumed Potency Calculations
- EC50 Calculation

Data Management and Reports

- Database for Storage of Assay Data
- Multiple Databases shared over the network (e.g. project databases)
- Secure Storage using an internal PKI Infrastructure
- Template Engine for Efficient Input
- GxP/SOP Support
- Secure External Data Transfer using PLA Secure Format (PSF) utilizing the internal PKI of PLA
- Export/Import
    - attach (virtually) any external systems using PLA Import and PLA Export Modules
- Report Engine based on XML/XSL technologies
    - Adobe Acrobat Portable Document Format (PDF)
    - Microsoft Word 2003 Documents
    - Microsoft Excel 2003 Documents
    - any customer specific output
- Graphic

GxP Features

- Automated Installation Qualification (IQ)*
- Automated Operational Qualification (OQ)*
- Automated Performance Qualification (PQ)*
- Template Engine

- SOP Support (Protect groups of assay properties from manipulation)
- Role based user administration

* requires a license of the PLA Validation Package

21 CFR Part 11

- Electronic Signatures
- User Login
- Fully customizable Password Logic
    - Aging
    - Complexity
    - Black Lists
- Inactivity Lock
- Audit Trail
- Documents signed digitally using the internal PKI for storage integrity

Overview of the Manuals

There are several guides available to you. Stegmann Systems has structured the help system according to your roles you might have concerning PLA.

First, you might have a look in the Getting Started section. A few pages tell you about the basic installation and principles of PLA.

PLA User

A PLA User uses PLA to define and calculate his assays based on the settings a PLA administrator defined for the database in use. The most relevant sources of information are:

	PLA 2.0 User Guide Learn the principles of PLA and its efficient use.
	PLA 2.0 My First Assay with PLA Follow a systematic guide to define and analyze a simple assay.
	PLA 2.0 Reference Find reference information for mathematical and technical options of PLA.
	PLA 2.0 Tutorial Videos Some Flash-Videos for common tasks within PLA. (Online Help only)

PLA Administrator

The PLA Administrator is responsible for setting up an already installed PLA for a workgroup. He defines user accounts and the global settings for the assay analysis. PLA Administrator is a role inside PLA.

	PLA 2.0 Administration Guide Find information concerning the PLA Administration.
	PLA 2.0 Validation Guide Find out how to validate PLA using the PLA Validation Package

IT Administration

The IT administration is responsible for installing PLA in your environment and set up central database services.

	PLA 2.0 IT Administration Guide Find information for the IT administration of PLA.
	PLA 2.0 Validation Guide Find out how to validate PLA using the PLA Validation Package

Getting Support

There are several ways to get support. Do not hesitate to make use of the available help options.

Websites

For Product Information: www.bioassay.de
Our Electronic Customer Feedback System (error reports, feature requests):
support.stegmannsystems.com

E-Mail

E-Mail to support@bioassay.de for any questions and comments.

Phone

During business hours (7:30 a.m. - 6:30 p.m. GMT)
English (and German) phone support is available: +49 6106 77010-0

Fax

+49 6106 77010-29

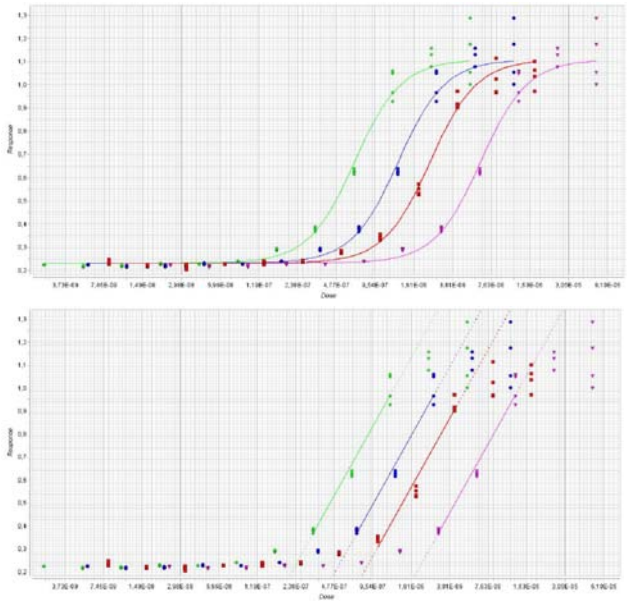
Getting Started

Parallel-Line and Parallel-Logistics Assays

Biological or potency assays are frequently analyzed with the help of the parallel-line or parallel-logistics (4- or 5- parameter fit) methods. These methods have major advantages over traditional single-point assays:

- The linear or sigmoid dose-response correlation is not only assumed but confirmed in each calculation.
- The dose-response curves of the standard and sample preparations are confirmed to be parallel. Whereas in single-point analysis parallelism is a necessary requirement too, but cannot be proven.
- A dose-independent potency in terms of the standard's potency is calculated for each assay, and its validity is statistically proven.

The complex statistical analysis of these methods requires an advanced software solution to be easy, flexible and efficient. This is the mission of PLA 2.0.



Installation of PLA 2.0

If your computer system complies with the system requirements, the PLA 2.0 setup process is easy and convenient. For the installation process administrative privileges on you computer system are required.

CD-ROM Version of PLA 2.0

Insert the CD-ROM into your CD drive. PLA 2.0 Setup should be executed automatically. If you have the auto-run feature of your disk drive disabled. Please start setup.exe by using the Windows Explorer or by selecting Run from your Start menu. The program to be executed is

<DriveLetterofCDDrive>:\setup.exe (e.g. D:\setup.exe)

Download Version of PLA 2.0

Please download the current version of PLA from the vendor's website (www.bioassay.de) and run the downloaded executable (e.g. PLA20-build601.exe).

Note: There may be a security warning of you computer system when you try to execute a downloaded program.

The PLA Setup now initializes.

PLA Upgrade

If you already had installed a previous version of PLA, the old version has to be un-installed first. PLA Setup is able to handle this for you and you will receive the following warning message (Note: the Yes and No answers are localized).
Select YES to uninstall the old version. No data will be lost.

Accept the Terms of License

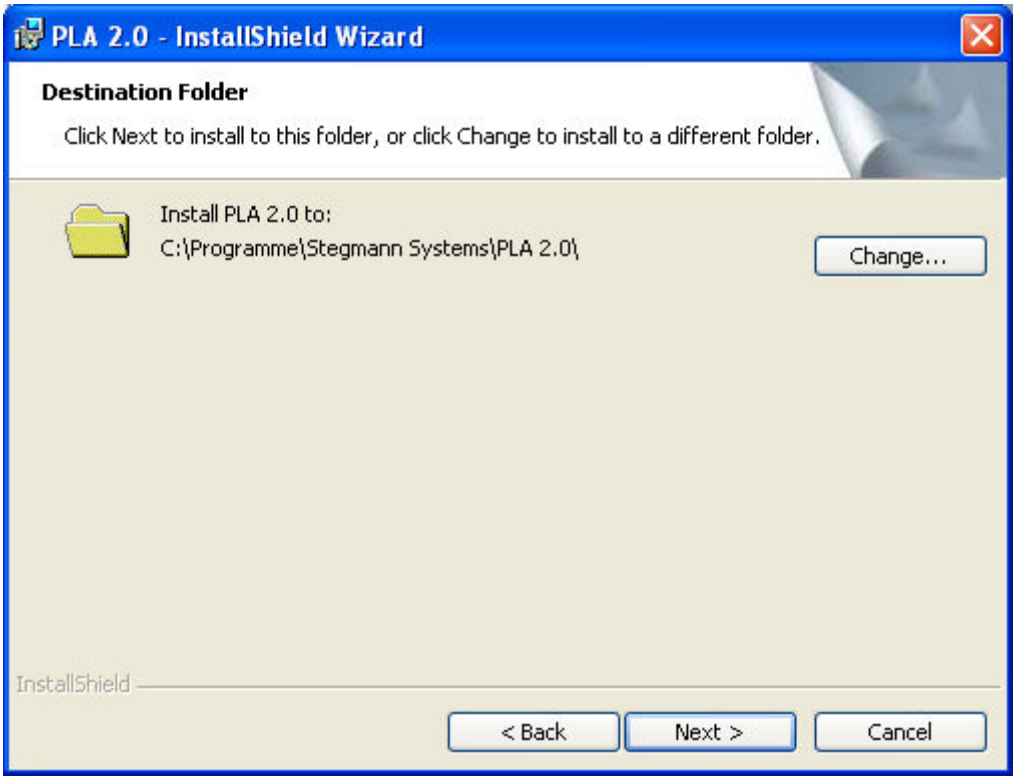
The next step is the acceptance of the Terms of License. This is required to install PLA.

PLA 2.0 - InstallShield Wizard
License Agreement
Please read the following license agreement carefully.
Software Licensing Agreement
All products sold by Stegmann Systemberatung or companies associated therewith, including demonstration sets, hardware, media and manuals (hereinafter referred to collectively as "Product") as well as all future orders shall be subject to the following provisions. If you do not accept these provisions, please return the product to us within seven (7) days of having purchased or received the Product. We will refund the purchase price minus
I accept the terms in the license agreement
I do not accept the terms in the license agreement
Print
InstallShield
< Back
Next >
Cancel

Once you select "I accept the terms in the license agreement" the Next> button is enabled. Select 'Next >'

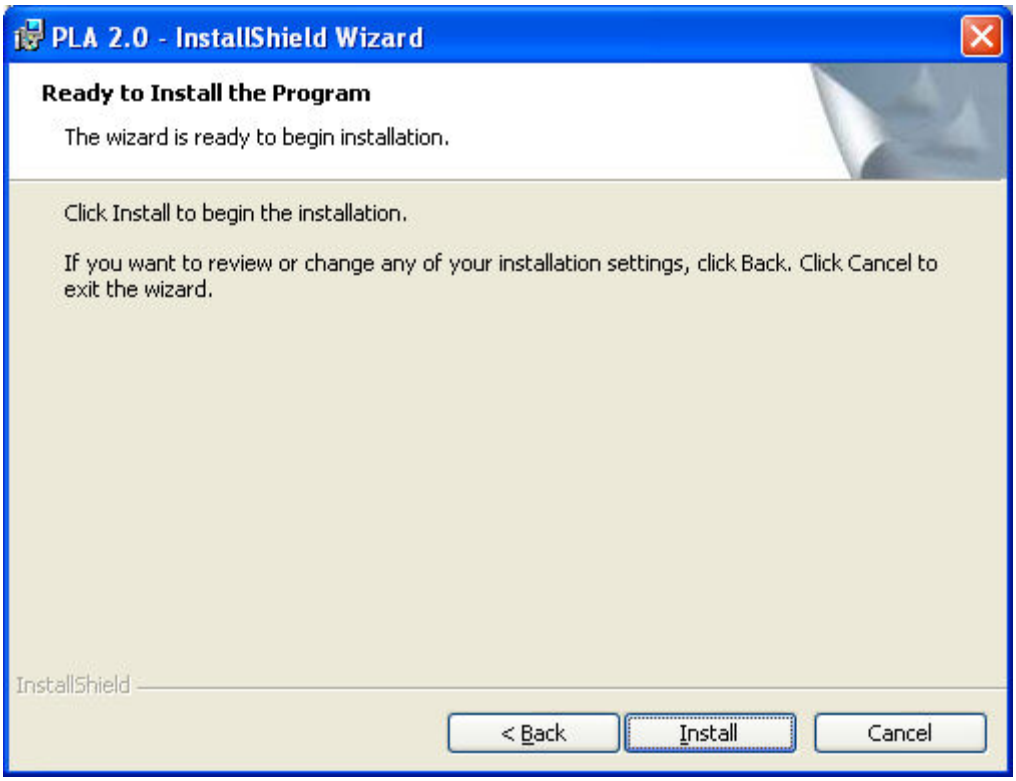
Select Destination Folder

By default, PLA is installed in the "Program Files" folder of your computer system. This screen allows you to select a different destination folder if you need to.

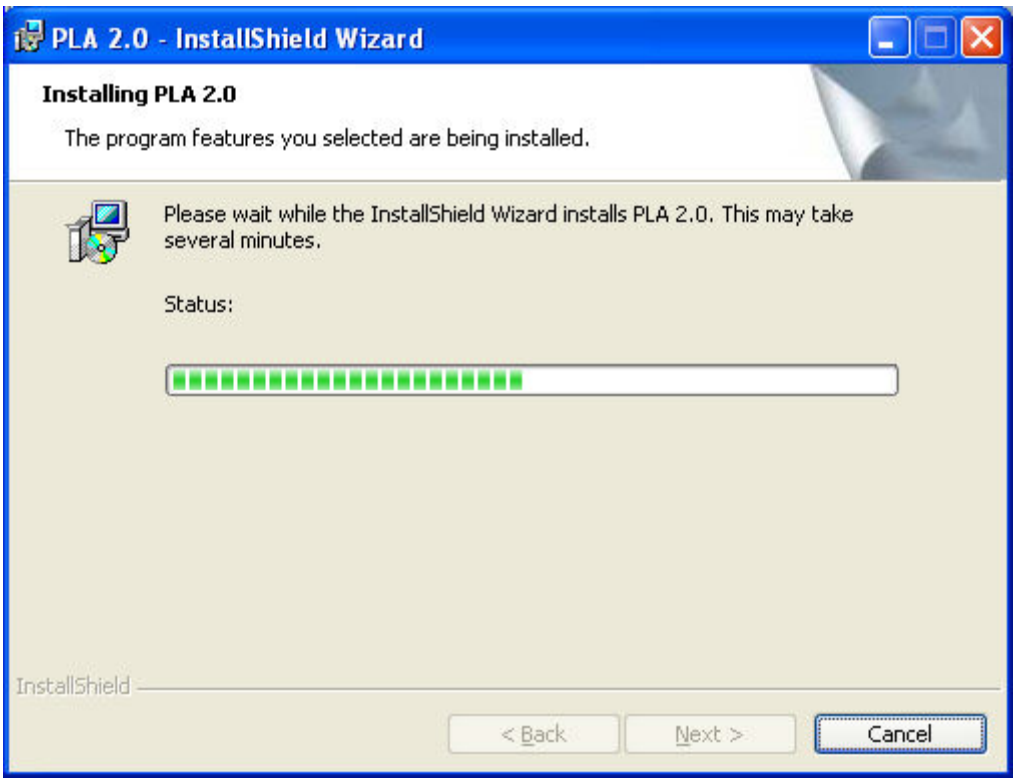

PLA 2.0 - InstallShield Wizard
Destination Folder
Click Next to install to this folder, or click Change to install to a different folder.
Install PLA 2.0 to:
C:\Programme\Stegmann Systems\PLA 2.0\
Change...
InstallShield
< Back
Next >
Cancel

Press "Next >" to continue.

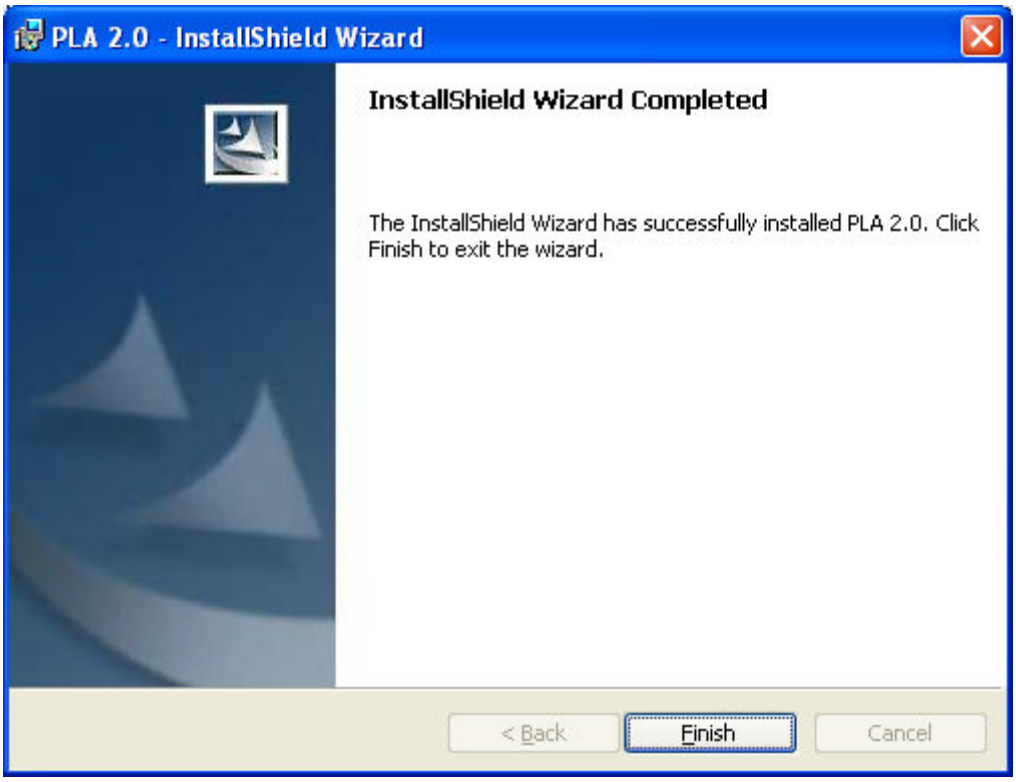
Start the Installation


PLA 2.0 - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

Click "Install" to start the installation procedure. The setup program starts the installation sequence:


PLA 2.0 - InstallShield Wizard
Installing PLA 2.0
The program features you selected are being installed.
Please wait while the InstallShield Wizard installs PLA 2.0. This may take several minutes.
Status:
InstallShield
< Back
Next >
Cancel

When the installation process is completed press Finish to close the installation dialog.


PLA 2.0 - InstallShield Wizard
InstallShield Wizard Completed
The InstallShield Wizard has successfully installed PLA 2.0. Click Finish to exit the wizard.
< Back
Finish
Cancel

If you have received a Software License Module (HardLock) with your retail package, attach it to your system. PLA is completely installed now.

Where to go from here:

- Basic Database Management
- Basic Concepts of PLA 2.0
- Basic of PLA 2.0 Mathematical Features

Attach the Software Licensing Module (Hardlock)

If you need to attach a Software Licensing Module (Hardlock) to your system,
you should **install the PLA 2.0 software first**, to have the necessary device drivers available.

Install Parallel-Port or Serial-Port Hardlock

- **Attach the Software Licensing Module (Hardlock) to your computer system.**

  If a printer is attached to your computer than detach the printer cable from your computer. Attach the Software Licensing Module to your computer's parallel port (Label 'PARALLEL') and re-attach the printer cable to the backside of the software licensing module (Label 'SERIAL').

  Computer System <> Software Licensing Module (Dongle) <> Printer Cable <> Printer

Install USB Universal Serial Bus Hardlock

- **Attach the Software Licensing Module (Hardlock) to a USB Port of your computer**

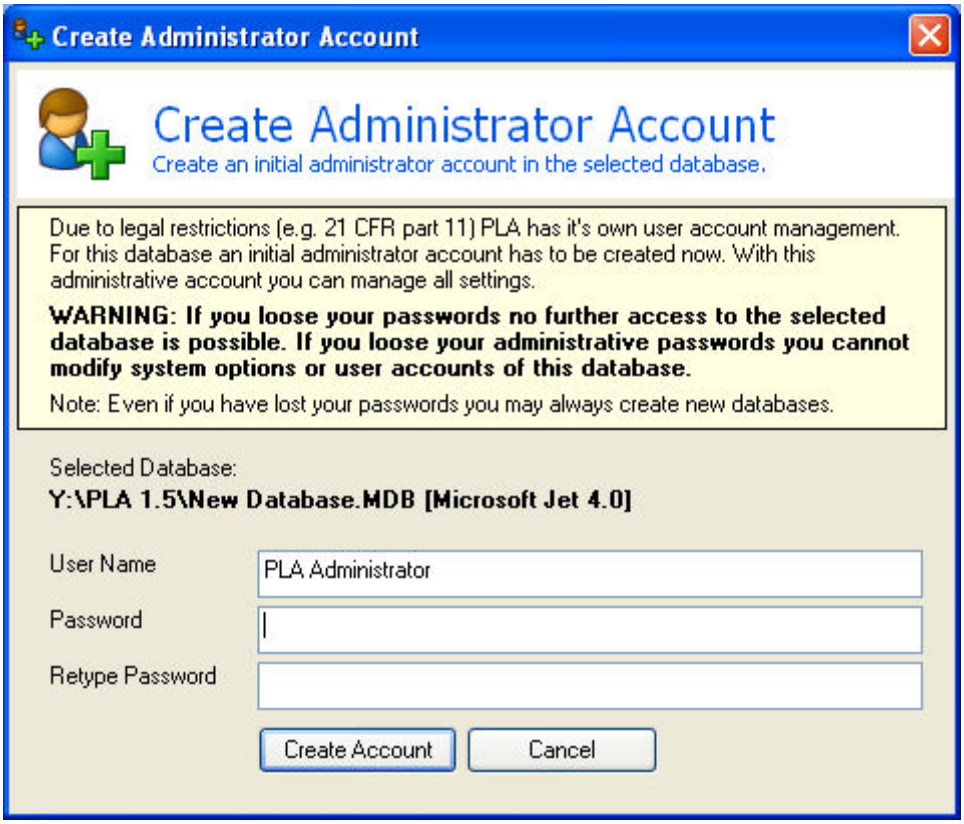
Basic Database Management

PLA 2.0 has a database management that allows you to create and connect to any number of databases. You can create databases for your different projects allowing you to define who has access to which data and to specify different security settings to these databases.

The databases can be shared across the network. There are two basic database types available: File-based databases and SQL Server based databases.

The installation process automatically installs a database called "PLA 2.0 Default Database". This is a file-based database with some example data.

Since PLA 2.0 has its own security system, you have to create an administrator account, when you create a new database. You are automatically asked to create this account. Do not loose the password of this administrator account. Using this account, you can create any number of additional user accounts.


Create Administrator Account
Create Administrator Account
Create an initial administrator account in the selected database.
Due to legal restrictions (e.g. 21 CFR part 11) PLA has it's own user account management. For this database an initial administrator account has to be created now. With this administrative account you can manage all settings.
WARNING: If you loose your passwords no further access to the selected database is possible. If you loose your administrative passwords you cannot modify system options or user accounts of this database.
Note: Even if you have lost your passwords you may always create new databases.
Selected Database:
Y:\PLA 1.5\New Database.MDB [Microsoft Jet 4.0]
User Name
PLA Administrator
Password
Retype Password
Create Account
Cancel

File-Based Database

This database type is based on a secured Microsoft JET 4.0 database.

Disadvantages:

- This database type should not be shared with more than 3 or 4 concurrent users.
- Size restriction: The maximum size of the database is limited to 2 Gigabytes.
- It should be compacted using the PLA Database Manager regularly.

Advantages:

- This database type can be created without deeper knowledge of database servers or involvement of your IT department.

- This database type is file based. You only need write access to a network share to create and connect to this database type. No administrative privileges are required.
- Since the database contains of only one file it is easy to backup.

Database Server Based Databases

These databases require an installed Database Server. Currently the following database management systems are supported:

- Microsoft SQL Server 2000 Desktop Engine (MSDE)
- Microsoft SQL Server 2005 Express Edition
- Microsoft SQL Server 2000 or higher

The database administrator has to create an empty database on the database server. Once you have defined a connection to this database using the PLA Database Manager PLA automatically creates the required tables in this database.

There are some basic things to know:

- The Database Server user account PLA used to connect to the database needs to be able to modify the database using standard SQL DDL and DML statements. If your IT department does not accept this, they'll have to create the tables using a SQL Script available with PLA (details are found in the IT Administration Guide)

- The integrity of PLA's data is not endangered by the knowledge of this account, because all relevant data is protected by the use of cryptography. However, this account should be kept secret, because it allows corrupting the database. PLA is able to detect corruptions of the database and it prevents corrupted objects from being used.

Further details for Database Server based databases are found in the IT Administration Guide.

Basic Concepts of PLA 2.0

There are a few basic concepts you should understand for efficient use of PLA.

- Database Storage Concepts
- Object types and hierarchy
- Inheritance of object properties

Database Storage Concepts

- **All Assay Data and Properties are stored in the selected database.**
  There is no need to work with individual files while working with assays. The advantage of this approach is the easy accessibility of the data even across networks. All data, properties, audit trail information and security information is held at a single place. The navigator allows you to navigate between the projects and assays of your database.

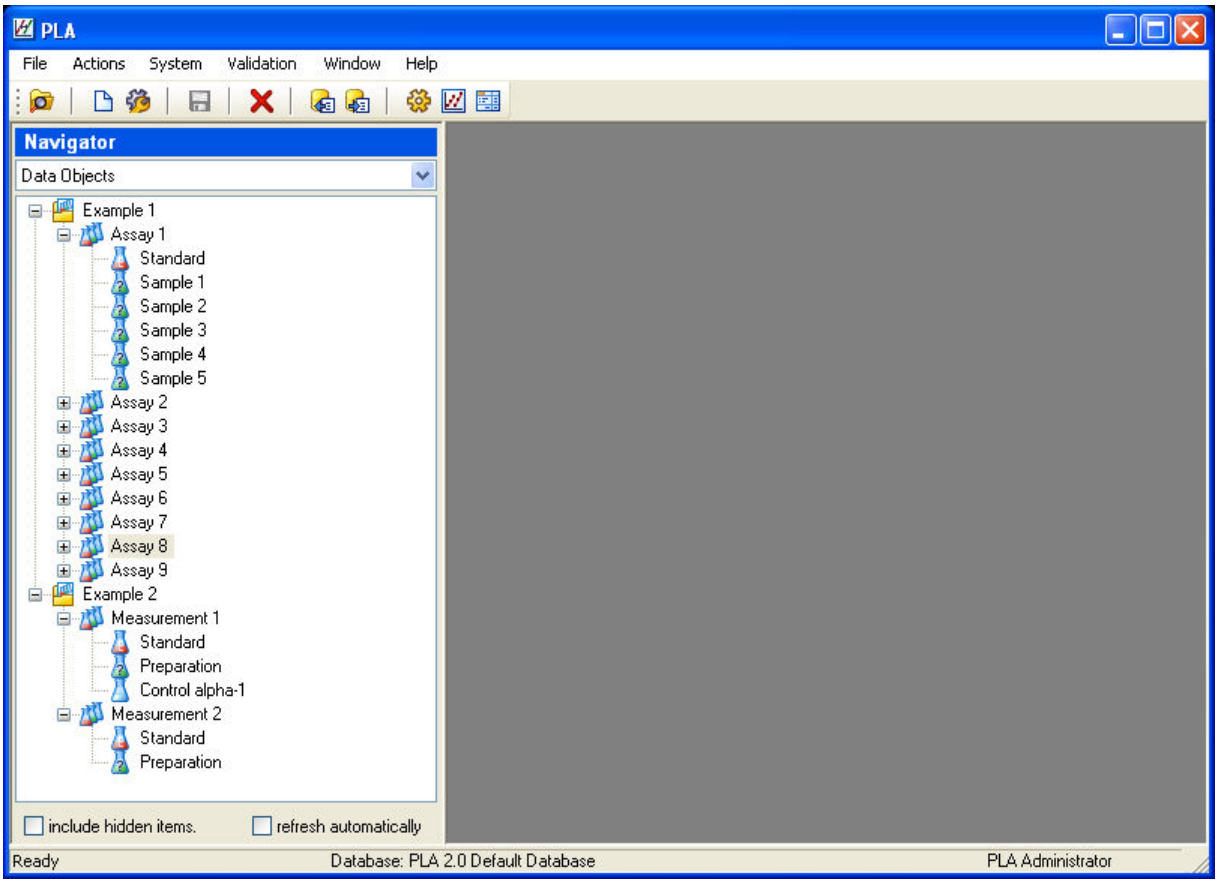
- **The selected database completely defines the security environment**
  All account definitions or other security relevant data are stored in the database. By this way, you are able to define high and low security projects and databases.

Object Types and Hierarchy

PLA makes use of five different object types that define your projects and assays.

	Project Projects collect your assays. They are on the first level of object hierarchy and they can be considered as folders. The properties you define for your project is never used for calculation. It is used as the source information for inheritance.
	Assay Assay objects are on the second level of object hierarchy. The assay is the parent object for the standards, preparations and control values of your measured assay. The properties you define here are not directly used for calculation; they are source properties for inheritance. However you may bind the properties of the child objects (standard, preparation, control) to these values, to obtain a single point of change.
	Standard (Reference) The standard object is a third level object and it is a child object of the assay. Each assay needs a standard object to be calculated. The potency of the preparation object is calculated with respect to this standard object. (Note: Some analysis properties of the standard are grayed out, because they are taken from the respective preparation object.)
	Preparation (Sample, Unknown) The second type of third level objects is the preparation object. PLA calculates the potency of the preparation object with respect to the standard object. Many calculation properties are taken directly from this object. An assay object needs at least one preparation object to be calculated.
	Control The third type of child objects of the assay object is the control. A control contains data for a series of positive, negative and blank controls. The use of control objects in PLA is optional.

The following graph illustrates a typical navigator view with these kinds of objects.



Inheritance of Object Properties

The understanding of object inheritance is necessary to make efficient use of PLA. The concept of object inheritance is derived from the fact that during normal course of laboratory life you will be analyzing many assay of the same type. To reduce input effort and errors PLA has many useful options to initialize new elements of your assay with correct properties.

Assays with identical properties can be kept together in a single project. You can define the initial values of new assays in the projects properties. If you now create a new assay within this project, all properties of the new assay are inherited from the project. You do not have to input any properties if these properties match your needs. Now you can create the third level objects of your assay. Everything you need to enter are the object names and the response values of your measurement.

IMPORTANT: If you change properties of parent objects, these changes do not influence the child objects if you did not bind the child objects to the parent explicitly (available on the third level only). If you want to deploy new settings to child objects you can make use of the Apply-functionality of PLA.

Beside this approach of inheritance, there are more advanced concepts of templates, GxP and SOP support. These approaches are described in detail in the user manual.

Basics of PLA 2.0 Mathematical Features

PLA 2.0 is a full featured system for the analysis of parallel-line and parallel-logistics dilution assays. The statistical features of PLA are described in detail in the Statistical Reference.

In this section, you will find information on

- Doses and Potencies
- Model, Response Transformations and Outlier Detection
- Analysis of Variance (ANOVA)
- Configuration Selection

Doses and Potencies

PLA is able to calculate different potency values found in today's requirements of assay analysis. In principle, you have four different starting points for potency analysis:

1. **Bulk Substance / Raw Material Potency**
   When you activate the bulk substance potency you can input the potency of your raw material. You have to specify how much amount of your raw material is solved in which amount of a solvent. PLA then automatically calculates the concentration/potency of your stock solution, which is the starting point for your dilution series.

2. **Stock Solution Potency**
   Another option is the direct specification of the stock solution as a starting point. If you do not specify a bulk substance/raw material potency or stock solution potency the latter is assumed as 1.0

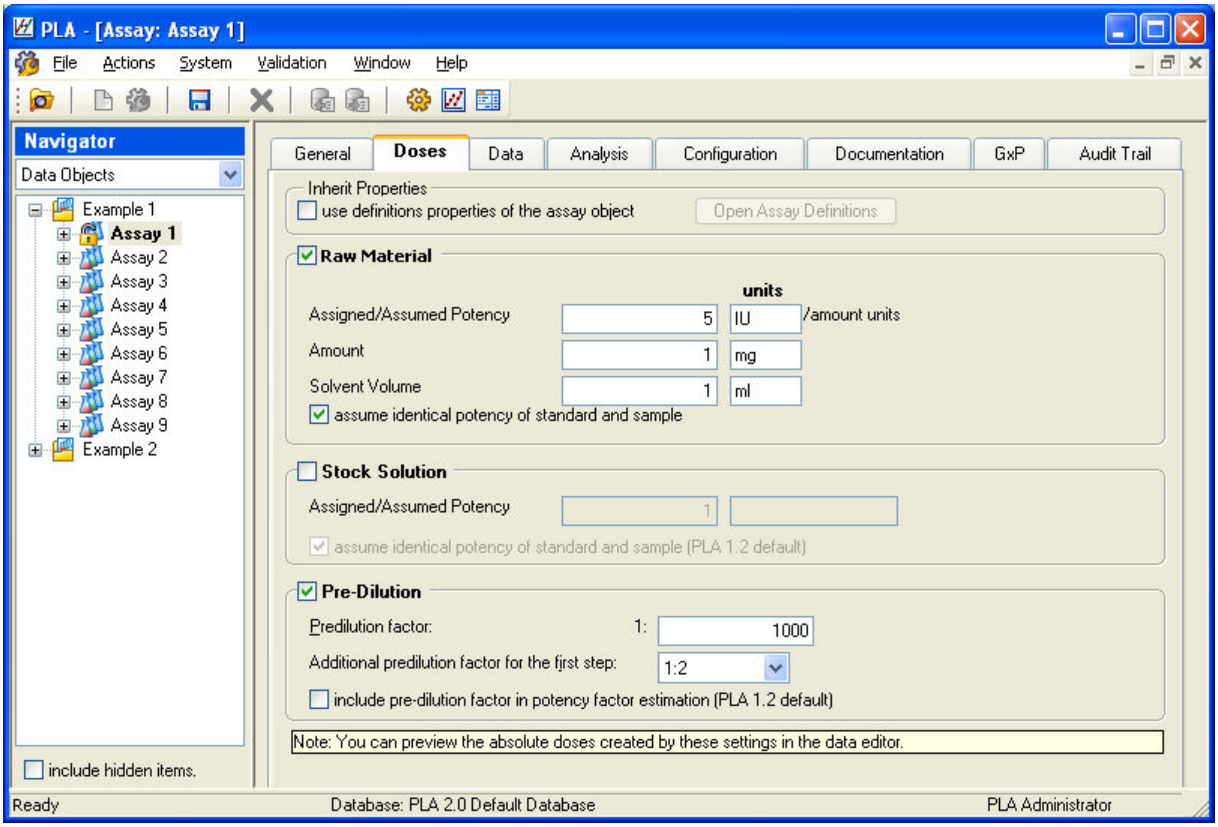
3. **Pre-Dilution Potency**
   You can specify two additional pre-dilution factors. The multiplication of these factors with the stock solution potency defines the concentration of the highest dose.

4. **Specification of the Dilution Series**
   The last step is the specification of the dilution series, which should be considered as relative doses of the dilution steps. If you want to enter absolute doses, don't activate the above options.

Assigned / Assumed Potency

By default, the assigned and assumed potencies of your bulk substance / raw material or stock solution of your standard and the preparation are considered to be equivalent. If they are equivalent the application of the analyzed potency factor to the potency of the standard leads to the potency of the preparation. As a consequence you have to enter potencies only at the standard object.

However, especially in Quality Control this approach does not necessarily meet your needs. If your reference material and your preparation potencies are not identical, PLA calculates relative potencies of the preparation with respect to the standard and to the assigned potency of the preparation. To get these values the potencies have to be entered at the standard AND the preparation level.



Model, Response Transformation and Outlier Detection

Parallel-Line Method and Parallel-Logistics Model

PLA 2.0 supports both:

- **Parallel-Line Assays**
  Typically, you select the linear parts of the dose/response curve for the analysis with the parallel-line method. This robust method allows you the calculation of the potency with a minimum effort. The asymptotes of the sigmoid dose-response relationship are neglected.

- **Parallel-Logistics Assays (4PL, 5PL)**
  The four and five parameter function according to Rodbard describe the full dose-response relationship. You need at least four or five parameter to calculate these methods.

Both methods require logarithmic transformations of the dose values. There is no mathematical implication which base of the logarithm to use. PLA uses to logarithm on the base of 2. This approach has two advantages:

- The mathematics of Parallel-Line Assays has been best described by D.J. Finney who makes use of the base 2.
- If you use twofold dilution series, the transformed numbers are integer values.

PLA calculates the potencies for each preparation of an assay separately.

Transformations

PLA allows four different transformations for parallel-line assays. They can be used to reduce an inhomogeneous variance distribution. Available models are

- linear transformation
- logarithmic transformation
- square root transformation
- square transformation

Outlier Detection

PLA has four optional outlier tests available. An outlier test removes response values from analysis that match a specified statistical criterion.

Three treatment based outlier tests are available, when you have three or more replicates:

- Dixon Test
- Grubb's Test
- Test based on standard deviation

These tests analyze each treatment group separately. They check the extreme value for statistical significance and remove it. Optionally these tests can be executed iterative.

An alternative approach is realized with the

- (Externally) Studentized Residuals Test

This test checks the influence of an potential outlier on the regression results. If the influence of the outlier is significant, it is removed from analysis. (Note: This test may require significant amounts of additional computational time.)

Analysis of Variance (ANOVA)

PLA has different variants of ANOVAs for hypothesis testing available. They are augmented by equivalence tests to achieve tests for parallelism.

The basic hypothesis tests are:

- Test for the significance of the Regression
- Test for the insignificance of deviations from linearity
- Test for the insignificance of deviations from parallelism

ANOVA based on Pure Error Separation

This is the preferred approach in PLA 2.0. This ANOVA separates the influence of the treatments from the pure error. The pure error is the error that is obtained by summing the error squares of the deviations of the replicate response values from the treatment means. This value is a direct measurement of the dispersion of the measurement system. This method is available if you have at least two replicates.

The model allows calculating significant deviations from the model as the significance of the lack-of-fit values.

ANOVA based on Residual Error

This is the classical approach based on the regression model. In principle, the analysis of variance considers the regression model and deviations from the regression model as sources of variation. The lack-of-fit gets part of the error term, so there is no separate test of linearity with this approach. This approach is available with one or more replicates.

Hypothesis tests base on separate ANOVAs

This is the PLA 1.x compatible approach. For each hypothesis, separate regressions are carried out and the individual ANOVAs are calculated. The linearity is tested as the significance of a quadratic term.

Test of Parallelism

PLA has three different tests for parallelism available. The "classical" test is the F-Test for the insignificance of parallelism carried out as a difference of models test. Especially assay with low variability often fail this test. A new approach is the equivalence test, which tests the ratio of slopes or difference of slopes of the standard and the preparation against predefined constants (goalposts).

Configuration Optimization

The configuration of an assay in terms of PLA is the selection of individual treatments of the standard and the preparation for analysis. While in Parallel-Logistics Assays the whole dose-response curve is taken into consideration Parallel-Line Assays focus the linear portion of the dose-response curve.

There are three types of configurations available:

- **Full Curve**
  This is the default option. All treatments of the standard and the preparation are used for analysis

- **Fixed Range**
  A portion of the curve is selected by hand. The treatments of each object are numbered and you use these step numbers to select your regions of interest

- **Automatic Range Selection**
  There is a full list of range selection options available, for automatic selection of the significant dose-response curves in the parallel-line analysis.

The different configuration options can be defined for the standard and the preparations individually allowing e.g. to select a well-known area of the standard and to automatically find a matching range in the preparations.

User Guide

Introduction to Assay Analysis with PLA

PLA is a full featured system for the analysis of Parallel-Line Assays and Parallel-Logistics Assays. This manual describes the concepts and features of PLA. A systematic introduction can be found in the "My First Assay with PLA" section.

This manual covers the basic operation with PLA. The structure of the manual is:

- **Connect to PLA**
  The chapter describes how to connect to an existing PLA database.

- **Managing Objects**
  This chapter describes the basic handling of objects in PLA. This includes the management and editing of the objects. Inheritance, Templates, the Apply-function and import/export handling augments the chapter.

- **Object Properties**
  The chapter describes all the properties of the objects.

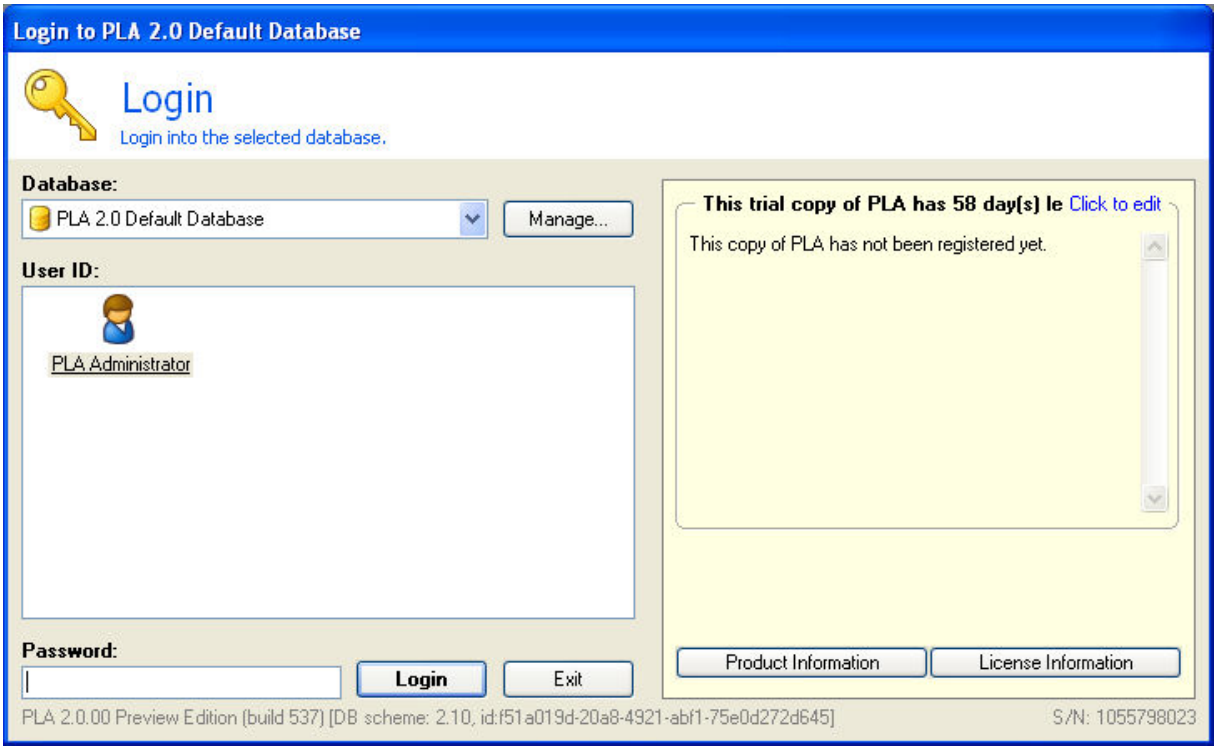
- **Analyzing Assays**
  How are assays analyzed with PLA. How do I create reports?

- **Advanced Topics**
  Information concerning the Audit Trail and the secure transfer of data, objects and templates.

Connect to PLA

Log in to PLA

PLA has its own User Management Infrastructure. You are required to log in to a database to work with PLA. After you have started PLA, the Login dialog appears. This dialog allows you to log in to the selected database, to select other databases and to start the database manager. You may also start the product information and license detail dialogs.



First of all **select the required database** if it is not already selected.

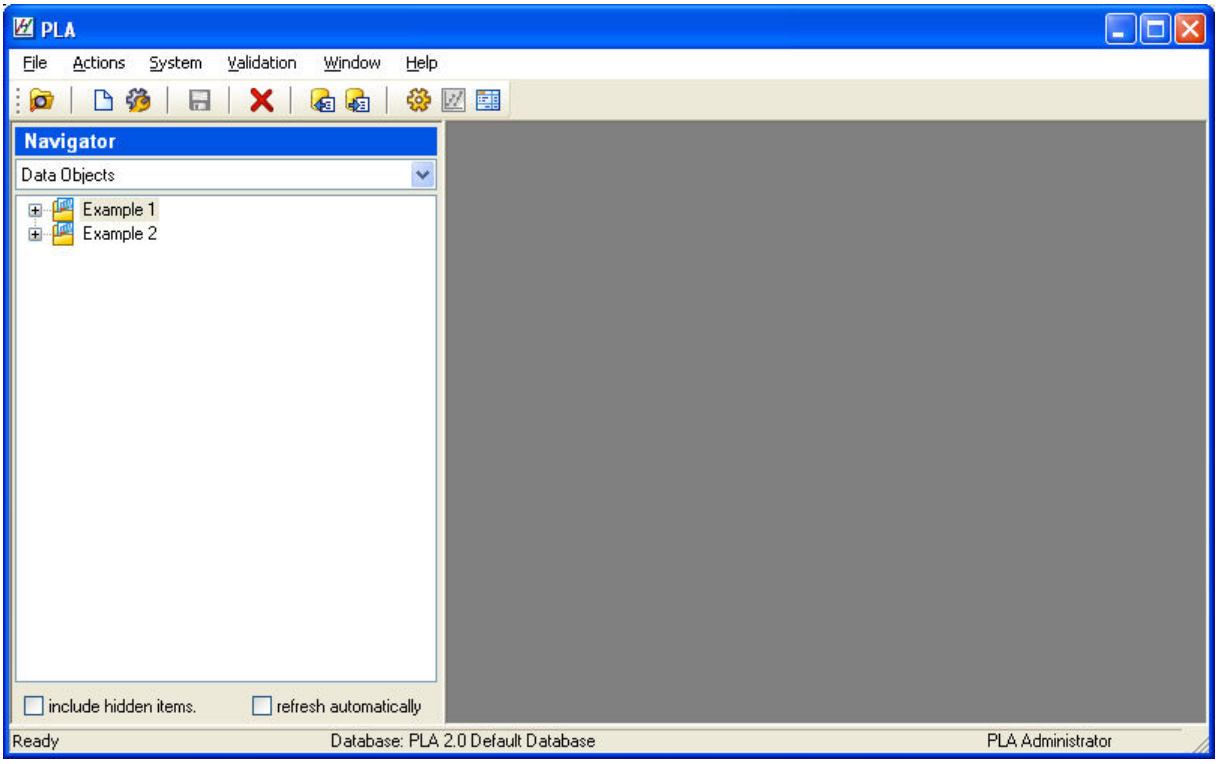
Once you have connected the database, the section User ID contains the list of defined users in that database. In the figure there is only a PLA Administrator defined. **Select your desired User ID and type in your password.** By clicking **Login** (or pressing the enter key) you are logged in. If the password was wrong, the user id was deactivated, the users password expired or if administrative database access has been activated there may be further messages.

On the right-hand side of the dialog registration information, product information and license informations are displayed. You may edit the registration information by selecting the hyperlink "Click to Edit" on the upper right of the figure. The product information and license information are displayed by clicking the respective buttons on the lower right.

After you have successfully logged in, the PLA main screen is displayed.

Screen Layout

The following figure shows the basic screen layout of PLA.



The screen consists of the following areas:

- **menu section**
  This is a classic windows menu system. The file menu contains commands management commands for the database objects (files), the action menu contains the commands for the analysis of assays, the system menu contains all the system options for PLA. The validation menu allows you to performance the installation, operational and performance qualification tasks, the window menu contains commands for organising the sheet windows. In the help section this online help and product and license information is found.

- **toolbar section**
  The toolbar section contains the most frequently used commands within PLA. They are activated and inactivated in correspondence to the selected objects in the navigator.

- **navigator**
  The navigator is displayed left to the sheet area. It allows you to manage and navigate through your selected database.

- **sheet area**
  Once you open an object for editing of for analysis it is open in the dark grey sheet area. This area is a multiple document interface (MDI), allowing you to use multiple objects at once.

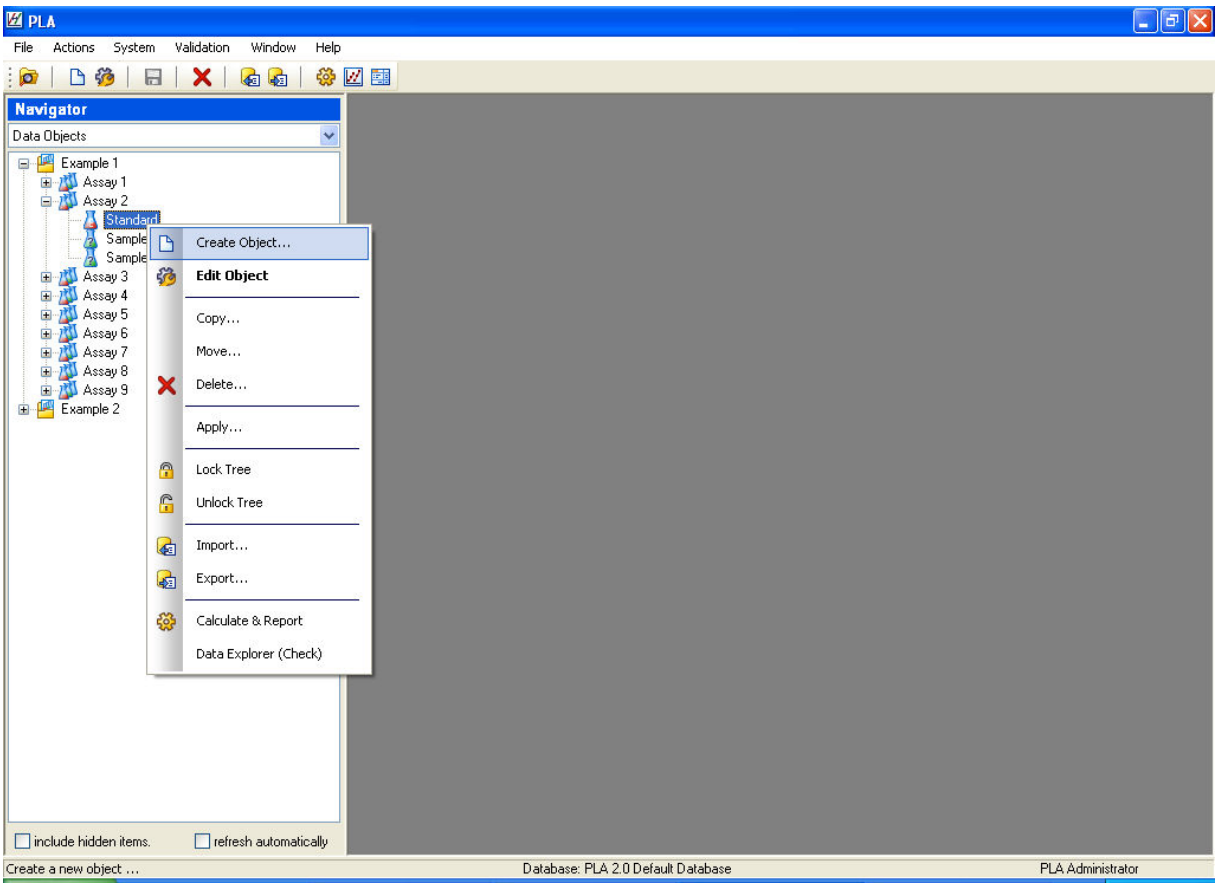
- **The information line**
  On the bottom of the window, the information line displays the connected database (in the figure: PLA 2.0 Default Database) and the logged in user (fig.: PLA Administrator)

The Objects of PLA

Managing Objects

The Navigator

Once you have logged in, the main instrument of work within PLA is displayed: the Navigator. The navigator allows you to navigate through your connected database.



The navigator displays the objects defined in the database in their hierarchical order.

The user selects an object and then selects an action available for the object. To select this action there are three ways:

- select an action from the **context menu** by clicking the right mouse button for the object. A context menu as shown in the figure pops up. Then select the desired action by a left click in the context menu
- use the **toolbar area** to select an action
- use the **menu** system to select an action

In addition you may simply **double-click** an object to open the object editor.

There are a few more options available for the navigator:

- on top of the navigator there is a drop-down box which allows to the "**Data Objects**" (as shown in the figure) or the "**Templates**".
- in the button line there is the option to display "**hidden items**" and

- to select the **automatic refresh** of the navigator which may by useful if you are working together with other users in the same database. If you select the refresh-function the navigator will automatically be refreshed after a certain number of seconds, which may be defined in the system options.

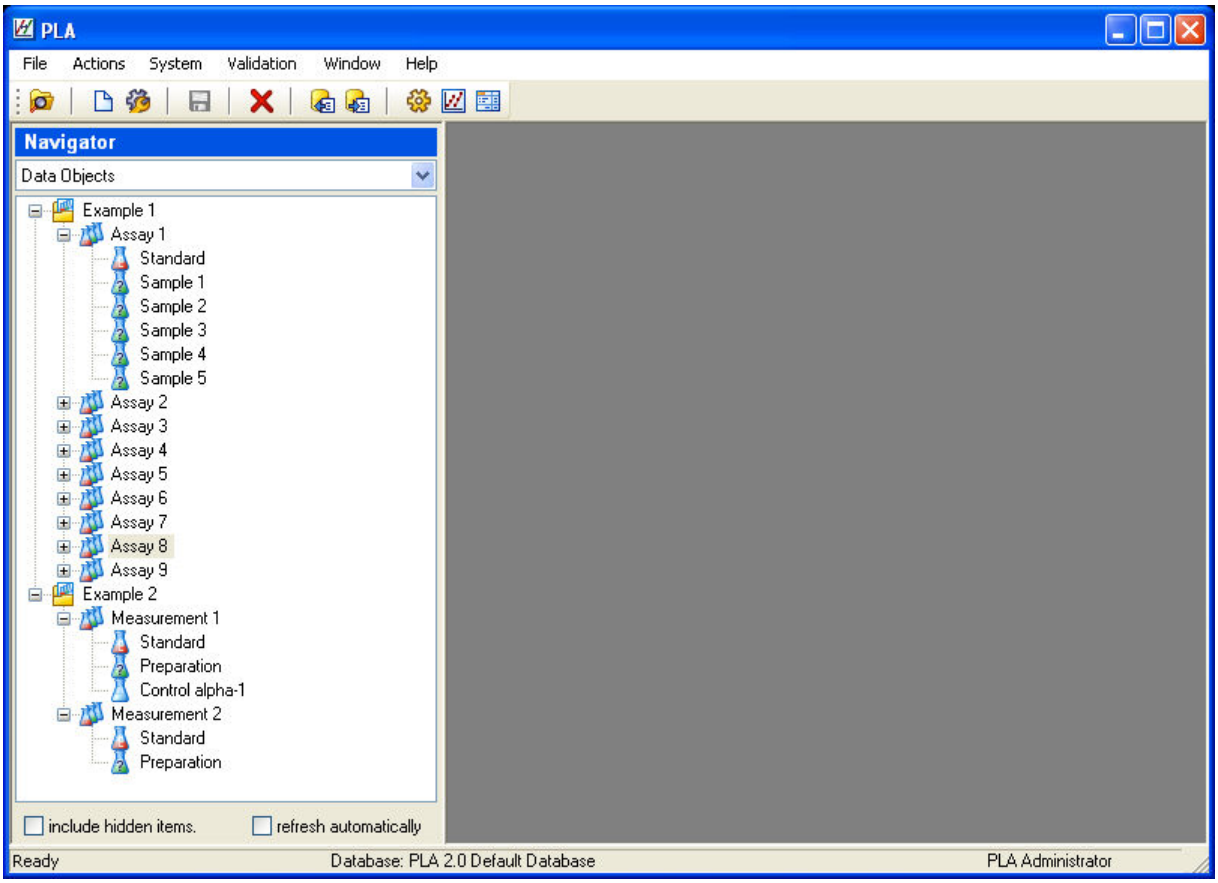
The navigator displays the objects in hierarchical order. Objects of the same type are displayed alphabetically. You may resize the navigator by shifting its right border. You may also toggle its display by a menu and a toolbar function. The latter can be useful if you analyze your assay using the ad hoc explorer and if you have only a limited screen resolution available.

Object Types and Hierarchy

PLA makes use of five different object types that define your projects and assays.

	Project Projects collect your assays. They are on the first level of object hierarchy and they can be considered as folders. The properties you define for your project is never used for calculation. It is used as the source information for inheritance.
	Assay Assay objects are on the second level of object hierarchy. The assay is the parent object for the standards, preparations and control values of your measured assay. The properties you define here are not directly used for calculation, they are source properties for inheritance. However you may bind the properties of the child objects (standard, preparation, control) to these values, to obtain a single point of change.
	Standard (Reference) The standard object is a third level object and it is a child object of the assay. Each assay needs a standard object to be calculated. The potency of the preparation object is calculated with respect to this standard object. (Note: Some analysis properties of the standard are grayed out because they are taken from the respective preparation object.)
	Preparation (Sample, Unknown) The second type of third level objects is the preparation object. PLA calculates the potency of the preparation object with respect to the standard object. Many calculation properties are taken directly from this object. An assay object needs at least one preparation object to be calculated.
	Control The third type of child objects of the assay object is the control. A control contains data for a series of positive, negative and blank controls. The use of control objects in PLA is optional.

The following graph illustrates a typical navigator view with these kinds of objects.


PLA
File
Actions
System
Validation
Window
Help
Navigator
Data Objects
Example 1
Assay 1
Standard
Sample 1
Sample 2
Sample 3
Sample 4
Sample 5
Assay 2
Assay 3
Assay 4
Assay 5
Assay 6
Assay 7
Assay 8
Assay 9
Example 2
Measurement 1
Standard
Preparation
Control alpha-1
Measurement 2
Standard
Preparation
include hidden items.
refresh automatically
Ready
Database: PLA 2.0 Default Database
PLA Administrator

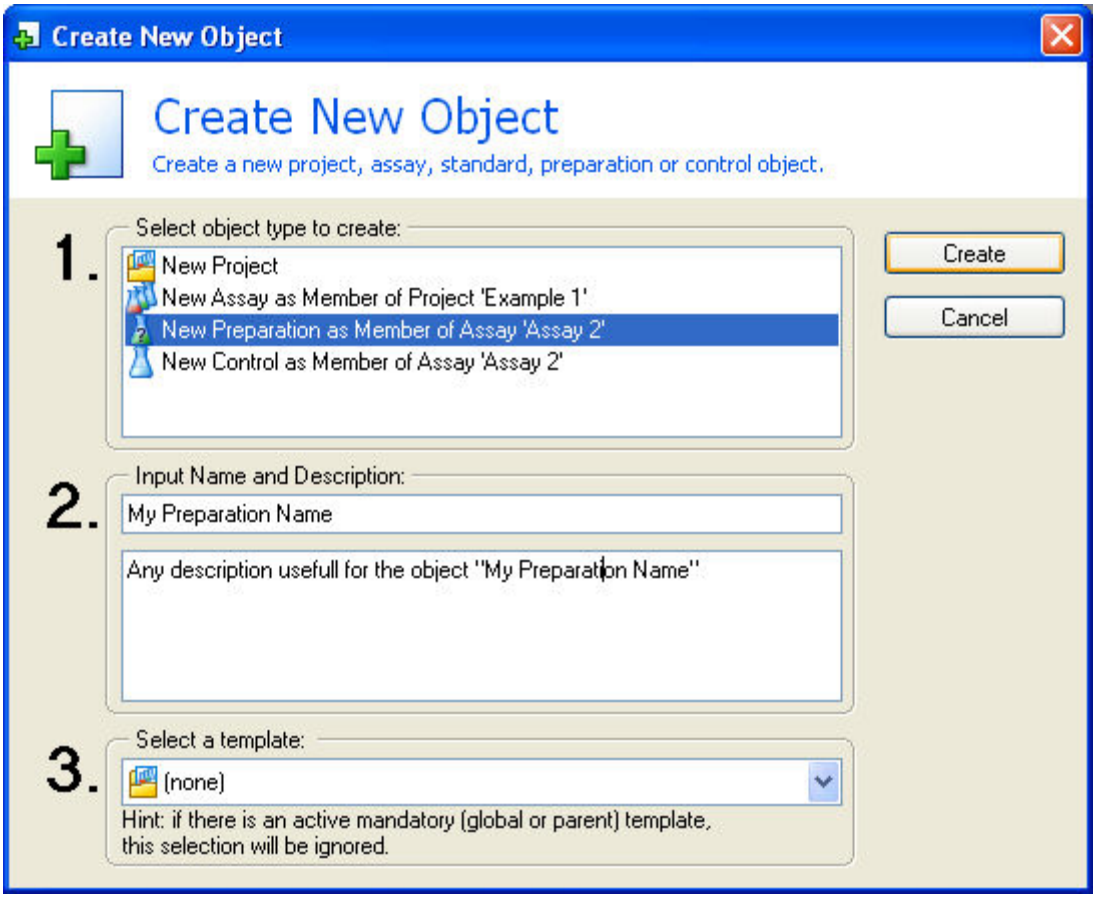
Creating Objects

New objects can be created either by import data or by manually selecting the "Create Object" function (menu, toolbar, navigator context menu). This section describes the manual function:

If you want to create a new object, you have to select a neighbor object in the navigator and then select the "Create Object" function. "Neighbor" object has the following meaning:

- if you want to create a new project, select anything or nothing
- if you want to create a new assay, select any object that is a child of the project which shall be the parent project or the project itself
- if you want to create a new standard, preparation or control within an existing assay, select the assay or any of its child objects.

Once you have selected "Create Objects" the following dialog displays:


Create New Object
Create New Object
Create a new project, assay, standard, preparation or control object.
1.
Select object type to create:
New Project
New Assay as Member of Project 'Example 1'
New Preparation as Member of Assay 'Assay 2'
New Control as Member of Assay 'Assay 2'
Create
Cancel
2.
Input Name and Description:
My Preparation Name
Any description usefull for the object "My Preparation Name"
3.
Select a template:
(none)
Hint: if there is an active mandatory (global or parent) template,
this selection will be ignored.

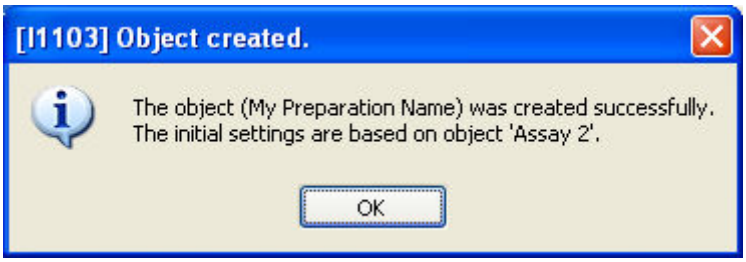
This dialog has three areas:

1. Select an **object type**. There are several entries that allow to create different objects. This list depends on the neighborhood stated above. In the figure you have the option to create four different object types. The selected option is a preparation that will be a child of the assay "Assay 2".

2. In the second section you have to input the **name and a description** of the new object. This is mandatory.

3. In the third section you may want select a **template**. If you don't select a template the standard inheritance is used.

Once you press Create the new object is created. You will receive the following message which indicates, which object served as a template:


[I1103] Object created.
The object (My Preparation Name) was created successfully.
The initial settings are based on object 'Assay 2'.
OK

In our case standard inheritance has been used and the object settings are initialized with the values of "Assay 2".

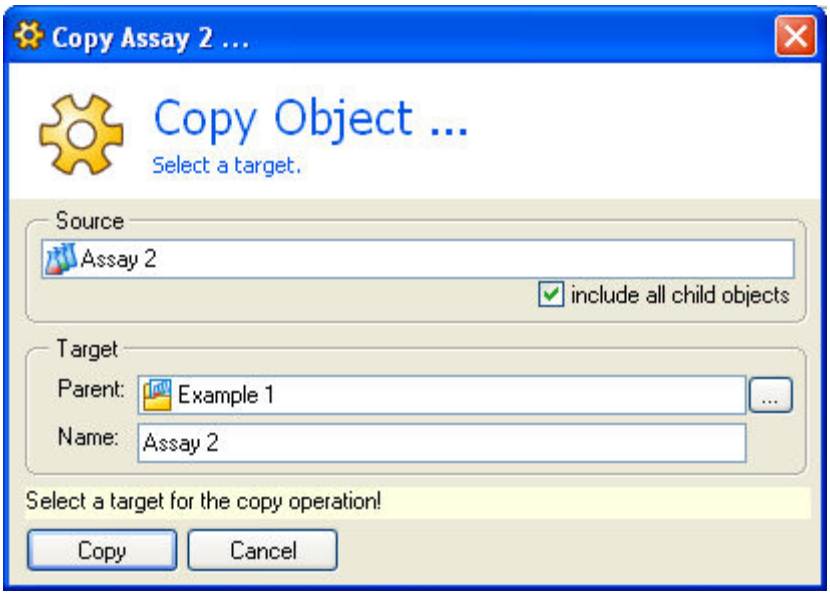
Copying and Moving of Objects

Objects can be copied and moved between different parents. If you copy an object the new object is completely new initialized with the values of its source. The audit trail starts with a create object entry. If you move an object, only the parent link is refreshed.

If you use electronic signatures there are some restrictions:

- It is not allowed to copy or move objects into signed assays.
- It is not allowed to move child objects of signed assays.

To use the copy / move functionality first select the object of interest. Then select the copy or move function from the file menu or the context menu of the navigator. The following dialog is displayed:



(Note: the Move dialog is identical to this one.)

Within the dialog there are two sections:

The source section has already been filled with the object of interest. If you have select a project or assay object, the copy dialog allows you to decide wether to include all child object. (Move always includes the child objects.)

You now have to select a target parent. By default the parent of the source is selected as the target parent. You can make use of the button right to the target field. This opens a dialog with all the available objects. You may rename the object by typing a new name into the name section.

Select "Copy" or "Move" to start the execution. When the operation is finished the dialog close and the navigator tree is refreshed.

Deleting Objects

You can delete objects by calling the delete function from the file menu, the toolbar or the context menu of the navigator. The object must not be locked or signed. You will be asked to confirm the delete operation (if you choose a project to delete, there will a second security confirmation). After you have confirmed the operation the objects will be removed from the database.

Notes:

- The audit trail information of the deleted objects is still intact.
- The operation is not reversible.

Hiding/Showing Objects

The 'hide' feature allows you to exclude objects from calculation and from display in the navigator. You can decide whether to hide or show an object by selecting the "hide" checkbox in the General section of the editor.

At the bottom of the navigator there is a checkbox to include hidden items into the display of the navigator.

Locking Objects

PLA stores its objects in a multi user database. To prevent that two or more users modify the same object at the same time, PLA locks the respective object. A locked object is decorated with a small locked padlock. The first user who accesses the object gets the exclusive right to modify its contents. If a user has exclusive rights on an object, it is decorated with an unlocked padlock.
PLA automatically handles locking and unlocking of all objects and there is normally no need to lock objects manually. Even applying properties for a whole project tree is handled without further user interaction.

However, sometimes a user plans to perform extensive changes on a collection of objects, which should not be disturbed by any other user. In this situation it is possible to explicitly lock the object tree using the "Lock Tree" function of the navigator context menu.

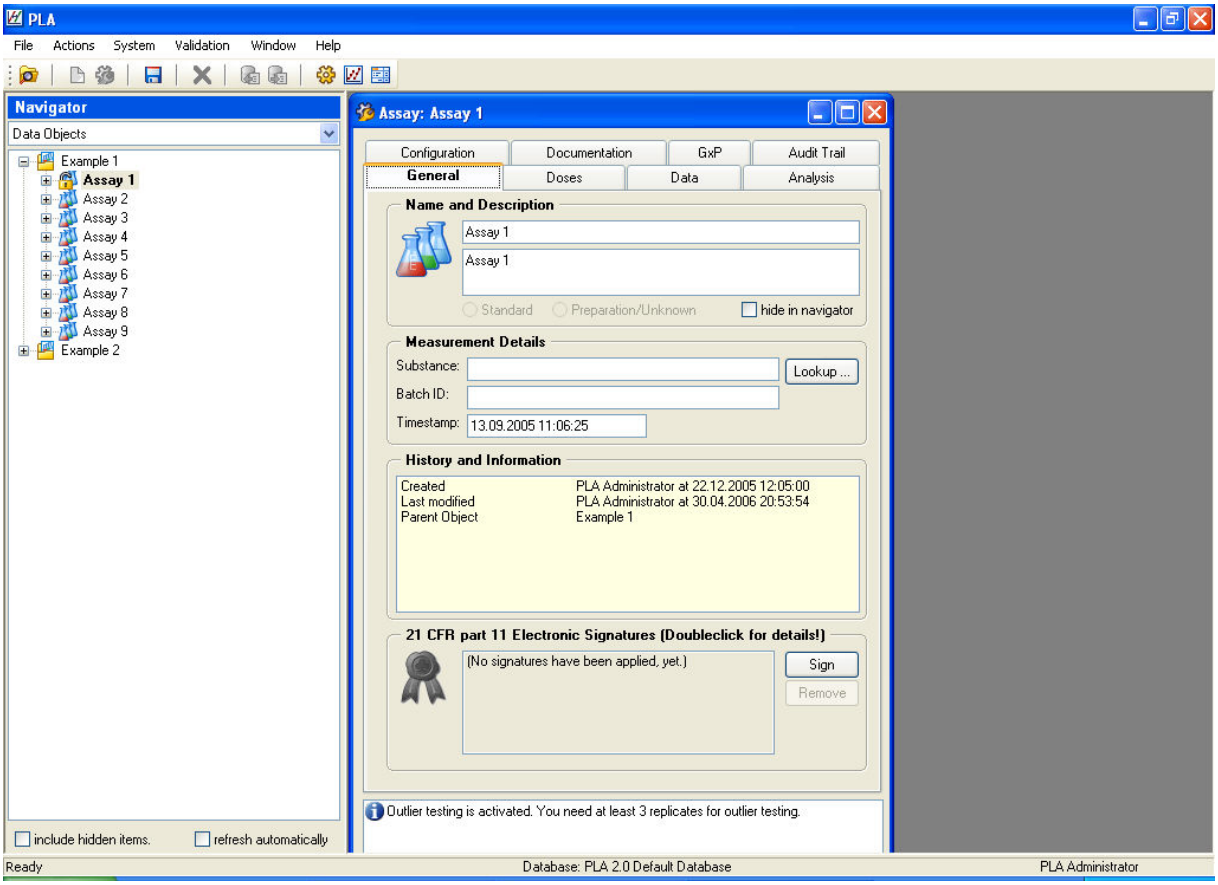
Notes:

- "Lock Tree" will fail, if any of the descendant objects is already locked by another user.
- The user should not forget to unlock the objects using "Unlock Tree" if the work is finished.
- Locking an object tree will prevent any other user to work with any object within that tree. This might bar your coworkers to work at all.

Editing Objects

The Editor

Once you select the Edit Object function in the file menu, the toolbar, or in the context menu of the navigator the Object Editor opens in the sheet area of PLA. The figure below, shows an opened Object Editor for the Assay with the name 'Assay 1':



The object editor consists of two areas:

- **the tab page area**
  where tab pages control the display of groups of properties. In the figure above the General tag page is selected. There are seven other pages available.

- **the information area**
  is at the bottom. In this area some notifications, warnings or errors may be displayed. In the figure there is note on outlier testing visible.

You may close the window by selecting Close Window function from the file menu or by clicking on the upper right cross of the object editor. If some properties are changed, you will be asked whether you want to save the object. If nothing changed, the editor is simply closed.

You may also select the Save Object function of the file menu or the toolbar to save an object.

Property Pages

Any object of PLA is described by a set of properties. These properties can be separated into the following groups, which are displayed as tab pages in the editor.

- **General Properties**

  describe general aspects of the edited object. The name of the object, the create and modification timestamps and the substance details are part of this group.

  In addition the latest calculation results of the object are displayed. (These results will be deleted when the object properties are changed.)

- **Dose Properties**

  This set of properties defines the preparation steps of an object. The settings also define which potency calculation shall take place in which way.

- **Data (Response) Properties**

  This page allows to define the dimension of the data set used for analysis. Data input takes place on this page

- **Analysis Properties**

  This page take the various analysis properties.

- **Configuration Properties**

  The configuration properties allow the manual or automatic detection of the regions of interest within your treatments.

- **Documentation Properties**

  You can add various documentation entries to the object definitions, such as reagents used, operators, equipment. This is added on the documentation page.

- **GxP Settings**

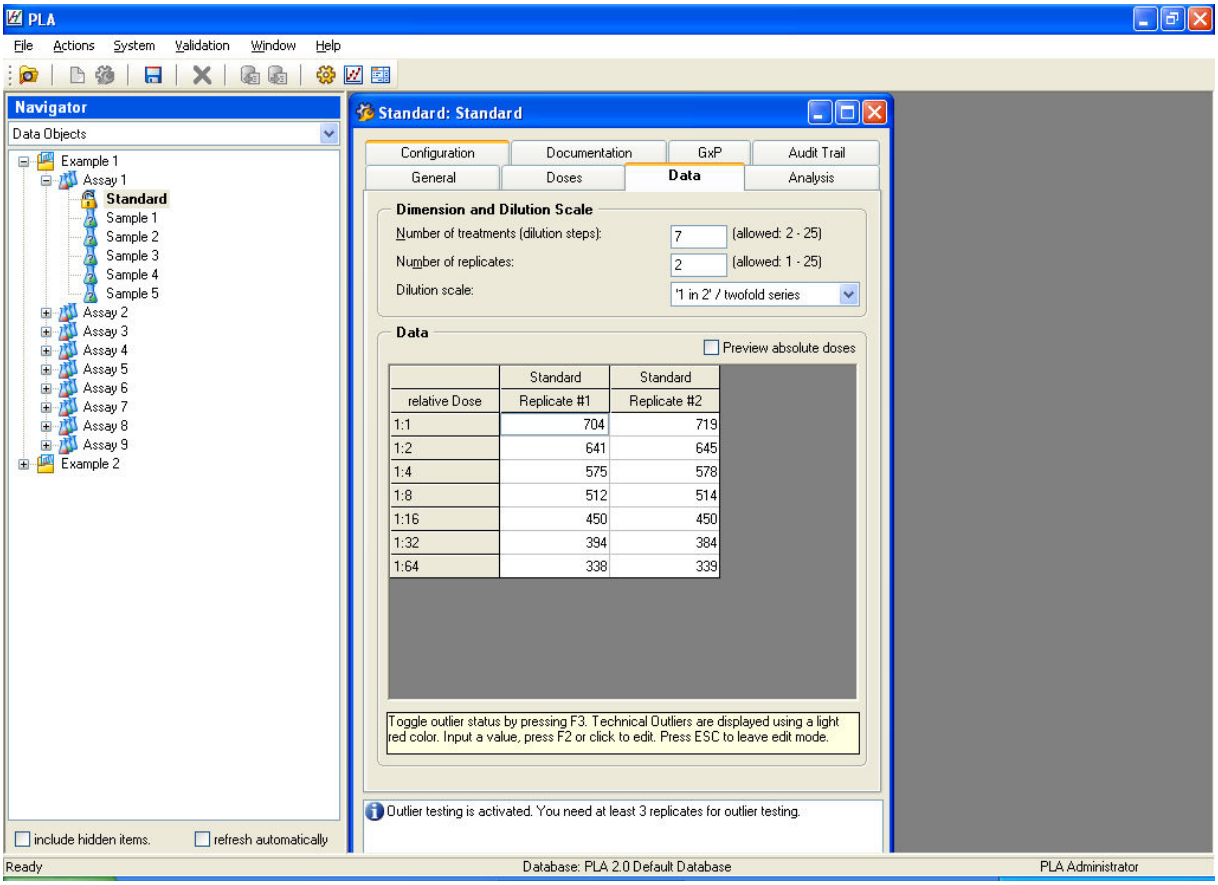
  On the last property page you are allowed to define the GxP settings you want to make use of to add input security to your objects.

Data Input

Data Input is available on the data tab page of the object editor dialog.

The input of response values is only available on the data tab pages of the respective objects: standard, preparations and controls. If your dilution scale property is set to direct dose input, you may input dose values (not response values) on the assay and project level too. These dose values are used as default values if you create new objects within these ones.

The following figure shows the data editor of an object:



There are three properties defining the dimension of the editor:

- The **number of treatments (dilution steps)**, defines how many lines are available
- The **number of replicates** defines how many response columns are available
- The **dose scale** setting switches between the '1 in 2'/twofold series and the direct dose input. In the latter case you have to input the relative dose values within the editor.

If you check the **preview absolute doses** button, an additional read only column appears, that displays the absolute dose values in dependance to the settings of Doses tab page. This may be useful to understand the richness of dose features of PLA.

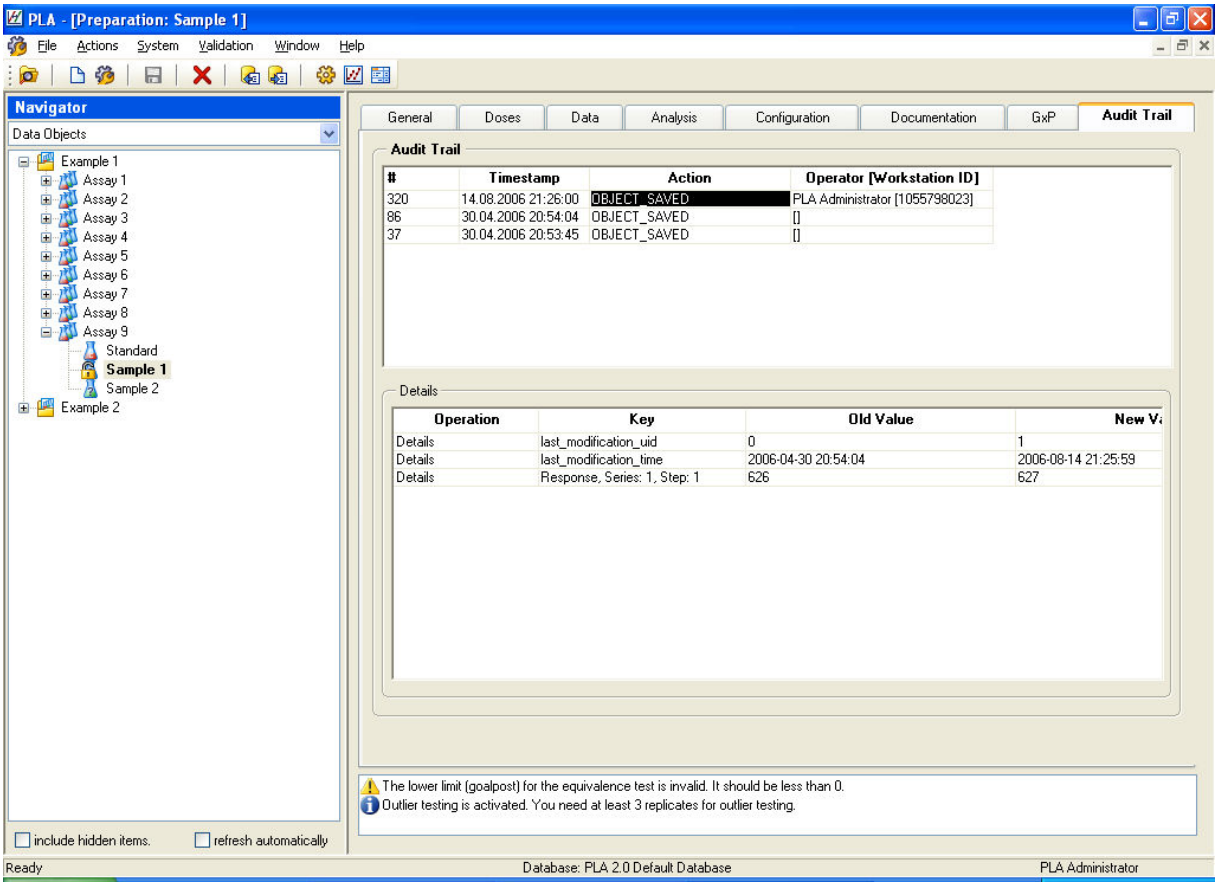
To mark a value as **technical outlier**, use the F3 button. This button toggles the technical outlier status of a response values. With the F2 button you can switch the editor between navigation and input mode.

Cut and Paste is available, too. Simply mark the values of interest and press Ctrl-C to copy them to the clipboard and Ctrl-V to paste the clipboard contents into the editor. Note that the editor has to be

in navigation mode, if you want to paste multiple values. The cut and paste is the optimal way to copy to and from spreadsheet applications such as Microsoft Excel (tm).

Audit Trail Page

The Audit Trail tab page of the editor shows every modification made to the object definitions.



The audit trail consist of two sections:

- the upper section contains information on the applied action. In the sample the object has been modified by PLA Administrator on 2006-08-14.
- the lower section displays the modification details of the action. In the sample, three values are saved. The most interesting is the manipulation of the Response value in Series 1, step 1.

Inheritance, Templates and the Apply Function

Inheritance

Inheritance of Object Properties

The understanding of object inheritance is necessary to make efficient use of PLA. The concept of object inheritance is derived from the fact that in during normal course of laboratory life you will be analyzing many assay of the same type. To reduce input effort and errors PLA has many useful options to initialize new elements of your assay with correct properties.

Assays with identical properties can be kept together in a single project. You can define the initial values of new assays in the projects properties. If you now create a new assay within this project. All properties of the new assay are inherited from the project. You do not have to input any properties if these properties match your needs. Now you can create the third level objects of your assay. Anything you need to enter are object names and the response values of your measurement.

IMPORTANT: If you change properties of parent objects these changes do not influence the child objects if you did not bind the child objects to the parent explicitly (available on the third level only). If you want to deploy new settings to child objects you can make use of the Apply-functionality of PLA.

Beside this approach of inheritance there more advanced concepts of templates, GxP and SOP support. These approaches are described in detail in the user manual.

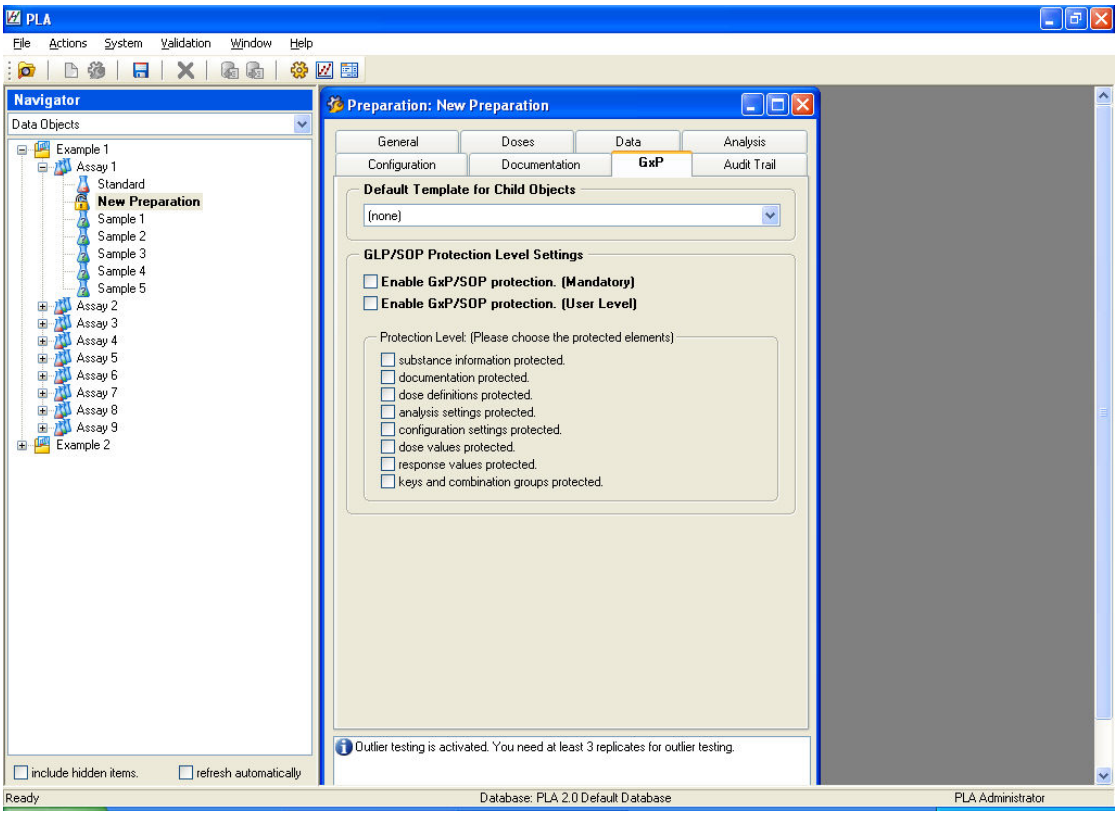
How Are the Initial Properties of an Object Set?

There are three variants how initial properties can be set:

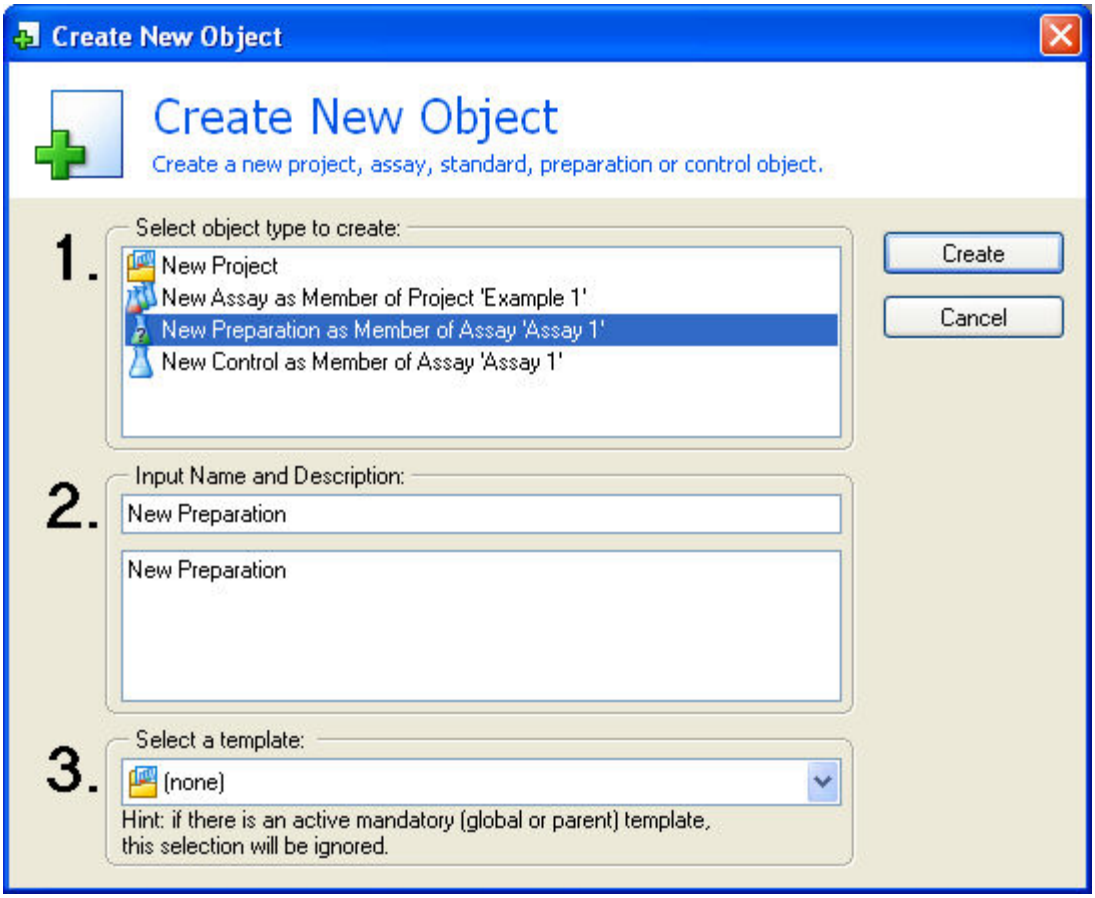
1. Use of a Template

A template is used when:

- the administrator set a mandatory default template in the Global Options
- the parent project has a template connection (page GxP of the editor):



- the user choose a template in section 3 of the Create dialog:


Create New Object
Create New Object
Create a new project, assay, standard, preparation or control object.
1.
Select object type to create:
New Project
New Assay as Member of Project 'Example 1'
New Preparation as Member of Assay 'Assay 1'
New Control as Member of Assay 'Assay 1'
Create
Cancel
2.
Input Name and Description:
New Preparation
New Preparation
3.
Select a template:
(none)
Hint: if there is an active mandatory (global or parent) template,
this selection will be ignored.

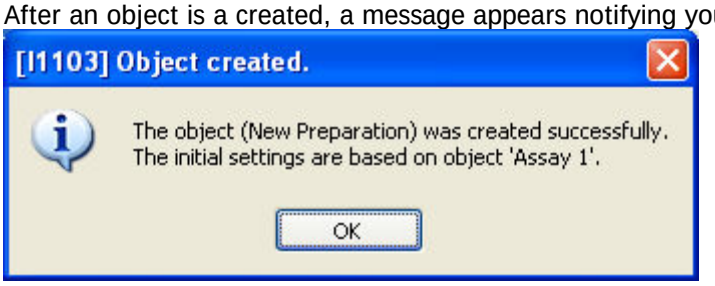
2. Inheritance

If no template is used all properties are inherited from the parent object.

3. Default Values

Default values are used when no template is used and no parent is available. This is possible for Projects only.

After an object is a created, a message appears notifying you about the used set of initial parameters:


[I1103] Object created.
The object (New Preparation) was created successfully.
The initial settings are based on object 'Assay 1'.
OK

Templates

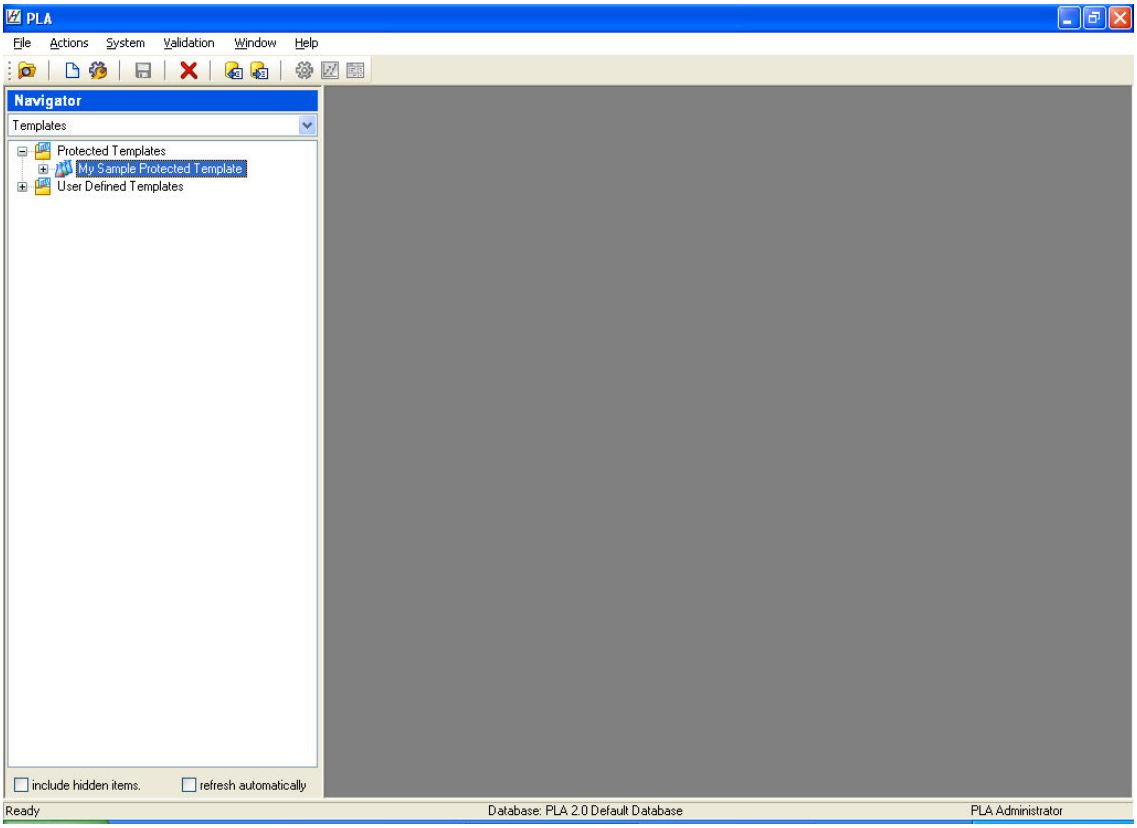
Templates are standard PLA objects used to create new objects. PLA differentiates two types of templates:

- **Protected Templates**
  Protected Templates can be created by administrators only. Standard Users are not allowed to modify these templates.

- **User Defined Templates**
  User Defined Templates can be created by all users. They are intended to be a tool.

How are Templates Created?

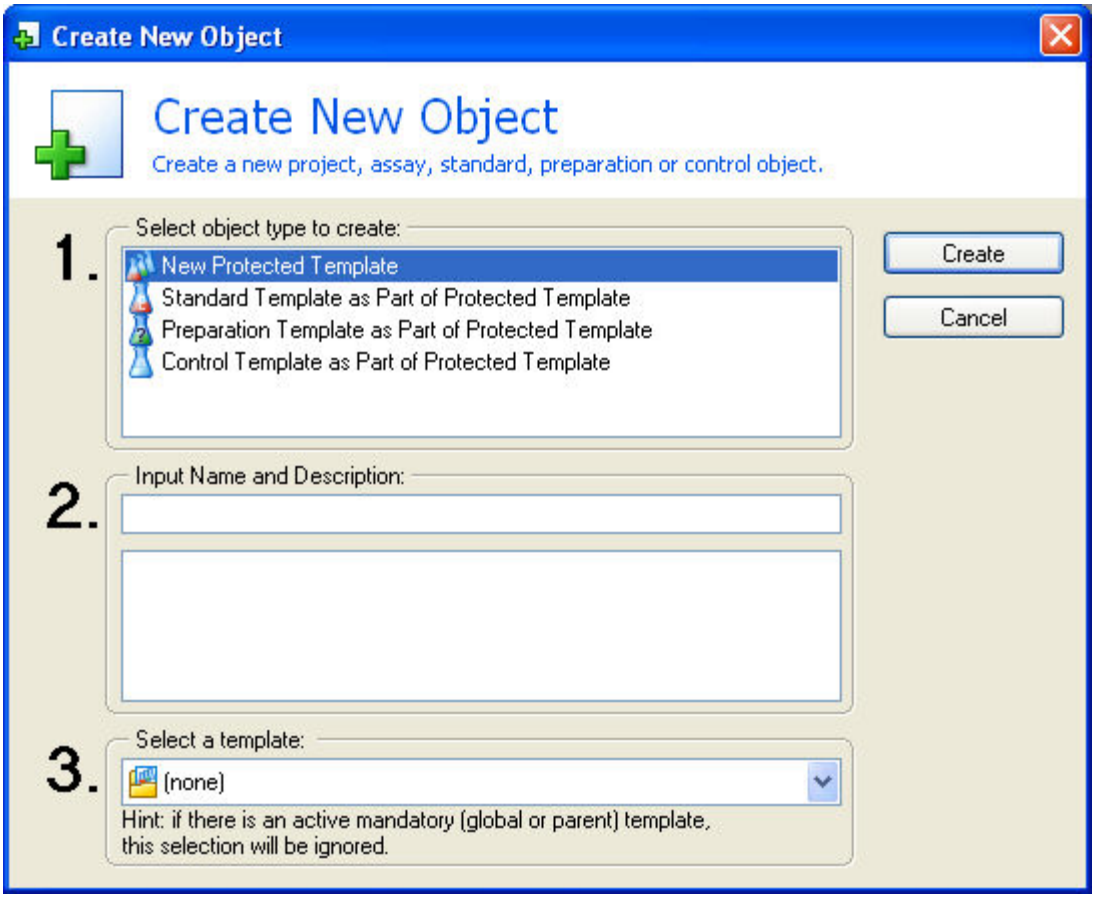
Switch to the Template mode of the navigator by selecting "Templates" from the drop down bow at the upper of the navigator. Then select "Protected Templates" or "User Defined Templates" and select the Create Object command to create a new template.



An template object is created. You may now edit all properties of the template. They will be used for the creation of new objects if the template is chosen.

Complex Templates

The template engine of PLA can except complex templates, that allow differentiated settings for standards, preparations and controls. If you select the Create Objects command on an existing template, you are able to define sub-templates for the different object types of PLA.

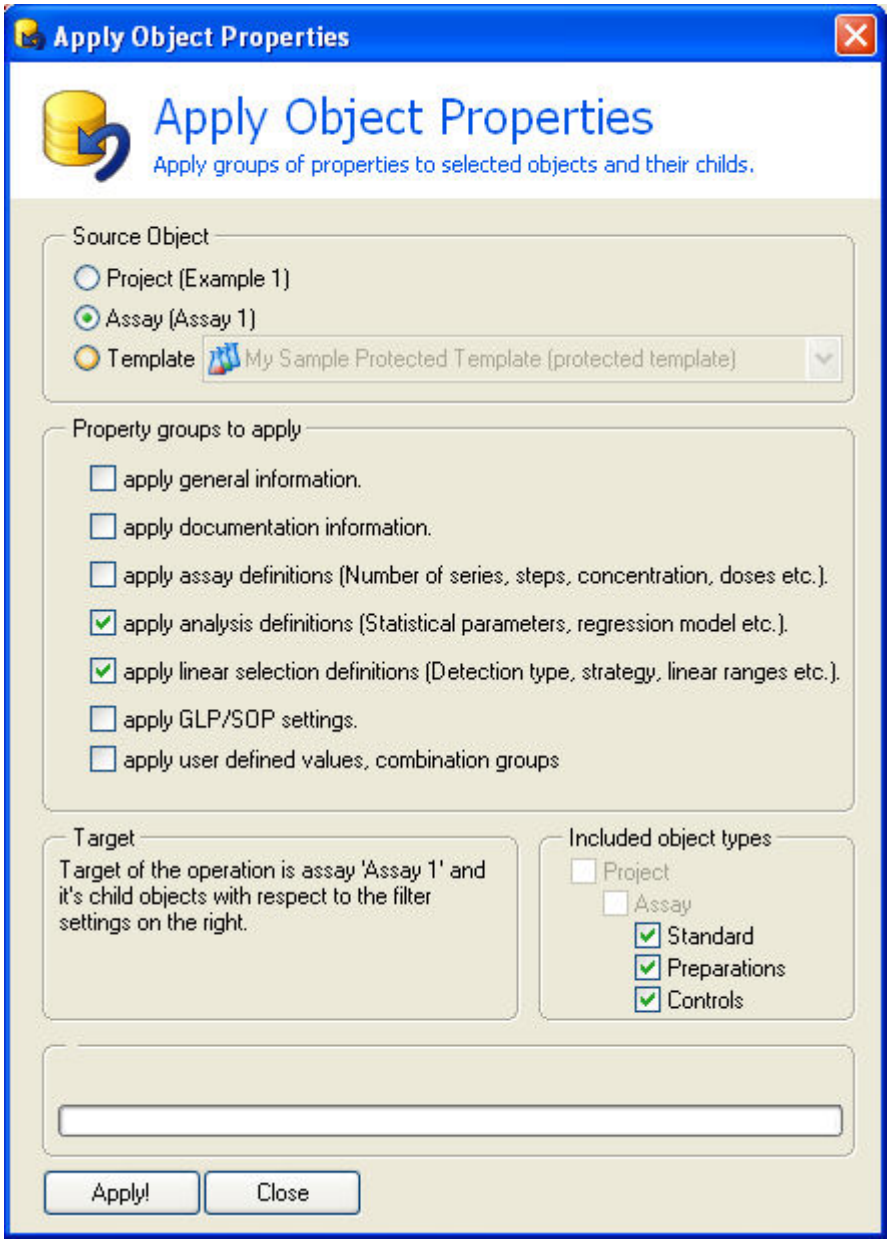

Create New Object
Create New Object
Create a new project, assay, standard, preparation or control object.
1.
Select object type to create:
New Protected Template
Standard Template as Part of Protected Template
Preparation Template as Part of Protected Template
Control Template as Part of Protected Template
Create
Cancel
2.
Input Name and Description:
3.
Select a template:
(none)
Hint: if there is an active mandatory (global or parent) template,
this selection will be ignored.

If you select a template in section 3 of the Create Objects dialog, PLA will use a sub-template of a matching object type, if this is available.

The Apply Method

In contrast to the Inheritance and Template mechanisms of PLA, the Apply-method allows you to mass modify object properties after an object has been created.

Select an object and select the Apply-command from the file menu or the navigators context menu. The following dialog appears:


Apply Object Properties
Apply Object Properties
Apply groups of properties to selected objects and their childs.
Source Object
Project (Example 1)
Assay (Assay 1)
Template
My Sample Protected Template (protected template)
Property groups to apply
apply general information.
apply documentation information.
apply assay definitions (Number of series, steps, concentration, doses etc.).
apply analysis definitions (Statistical parameters, regression model etc.).
apply linear selection definitions (Detection type, strategy, linear ranges etc.).
apply GLP/SOP settings.
apply user defined values, combination groups
Target
Target of the operation is assay 'Assay 1' and it's child objects with respect to the filter settings on the right.
Included object types
Project
Assay
Standard
Preparations
Controls
Apply!
Close

This method allows to copy properties of a source object to selected targets.

The dialog is grouped into three sections:

1. Source Section

Select the source of the properties you want to apply to the targets. Available source objects are the parent project, the parent assay or a template.

2. Property Selection

Select the groups of properties you want to apply. By default the analysis settings and the configuration optimization settings are selected.

Warning: If you execute apply, you cannot undo the changes: check the selected property groups carefully.

3. Target Filter

Select the objects types that are targets of the apply method.

After you have carefully checked the settings you may execute the apply.

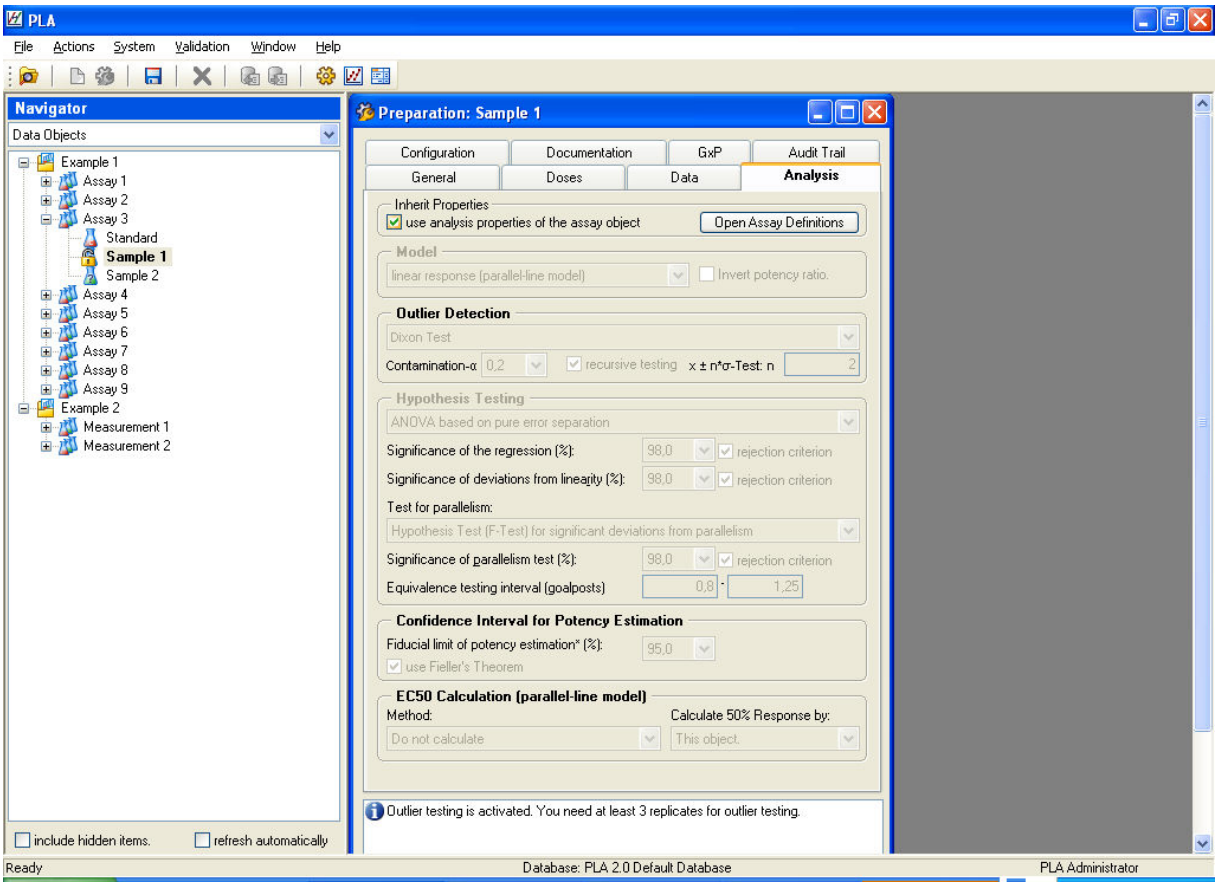
The "Inherit Properties" Property

To reduce the complexity of assay definitions the "Inherit Properties" option is available. For the following three groups of properties the Inherit Properties property binds the properties of an standard, preparation or control to the corresponding properties of the assay object. These properties are kept in sync with the assay properties automatically.

If you select the option, all other values of the property page are grayed out.

The "Inherit Properties" property is available for these groups of properties:

- Analysis settings
- Configuration optimization settings
- Dose settings



Import and Export

PLAs External Data Formats

The Import/Export methods of PLA directly support three file formats:

PLA Secure Format (PSF)

The PLA Secure Format is the preferred external data format of PLA. The format is digitally signed by PLA's internal PKI. This prevents the format from any manipulation and thus allows to securely transfer even electronic signatures from one PLA installation to another.

The digital signature of a PSF file is checked on every import. If the signature is invalid, the PSF is not imported.

PLA External Format (PEF)

The PLA External Format has the same structure as the PLA Secure Format (PSF), but it is not digitally signed. Therefore, no electronic signatures are imported from PEF files and they are not secured against manipulation.

PLA Native Format (PNF)

The PLA Native Format (PNF) is the PLA 1.2 compatible data format. It is delivered for compatibility reasons. The PNF format only excepts PLA 1.2 settings and is therefor not intended as an external PLA 2.x format.

Import

PLA is fitted with a strong import wizard that allows the importation of external data into PLA. One can distinguish three types of import:

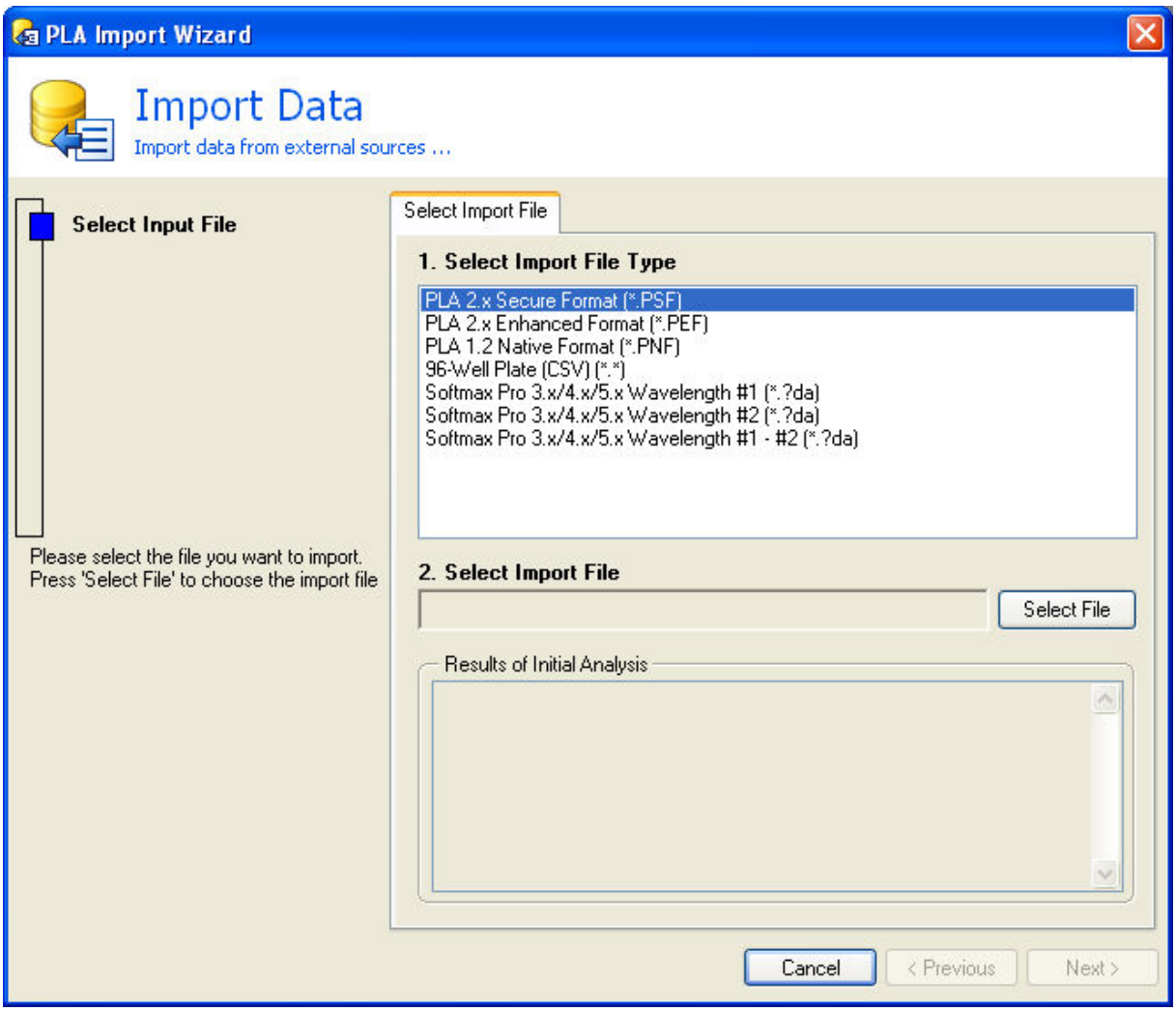
- Import of PLA's External Data Format
- Import of External Data using PLA Import Modules
- Import of External Raw Data using PLA Import Modules

The first two import types follow the standard path, while the latter type follows the raw data path (See following chapters).

Import Standard Path

Start The Import Wizard

First of all, start the import wizard by selecting Import from the file menu, the navigators context menu or from the toolbar. The Import Wizard comes up:

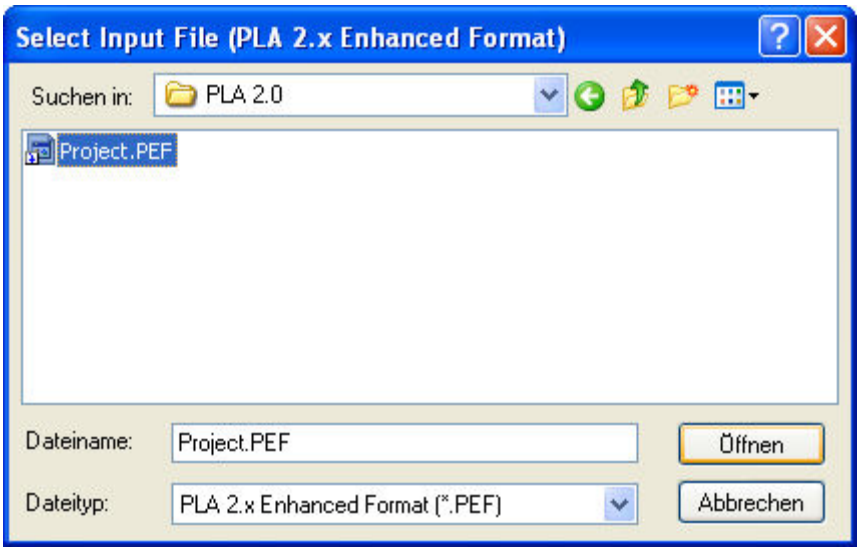

PLA Import Wizard
Import Data
Import data from external sources ...
Select Input File
Please select the file you want to import.
Press 'Select File' to choose the import file
Select Import File
1. Select Import File Type
PLA 2.x Secure Format (*.PSF)
PLA 2.x Enhanced Format (*.PEF)
PLA 1.2 Native Format (*.PNF)
96-Well Plate (CSV) (*.*)
Softmax Pro 3.x/4.x/5.x Wavelength #1 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #2 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #1 - #2 (*.?da)
2. Select Import File
Select File
Results of Initial Analysis
Cancel
< Previous
Next >

Select Import Format

Now select the desired import format. The PLA external file types are always displayed. The other displayed file types depend on your installed PLA Import Modules.

In this sample we now select a PLA 2.x Enhanced Format (*.PEF) file. After you have selected the file type, press "Select File" or simply double-click the desired file type.

A standard dialog of the operating system for opening a file appears:

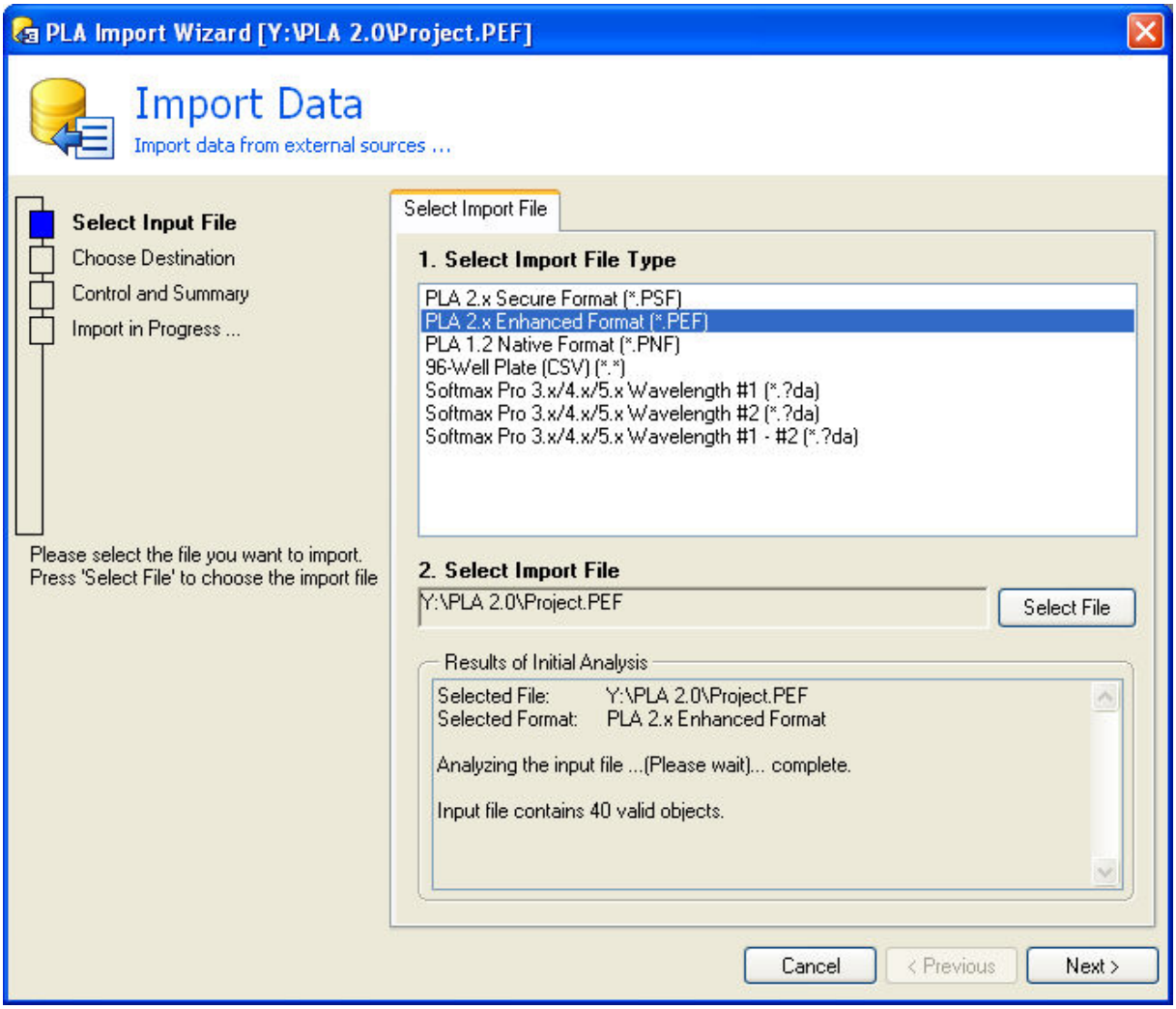


Select a file and press Open. (In the sample the file Project.PEF is chosen).

Note: The Import Default Path can be set in the Options dialog.

Analysis of the Import File

Once you selected the file, it is immediately analyzed by PLA. The results of the analysis are displayed in the Import Wizard:


PLA Import Wizard [Y:\PLA 2.0\Project.PEF]
Import Data
Import data from external sources ...
Select Input File
Choose Destination
Control and Summary
Import in Progress ...
Please select the file you want to import.
Press 'Select File' to choose the import file
Select Import File
1. Select Import File Type
PLA 2.x Secure Format (*.PSF)
PLA 2.x Enhanced Format (*.PEF)
PLA 1.2 Native Format (*.PNF)
96-Well Plate (CSV) (*.*)
Softmax Pro 3.x/4.x/5.x Wavelength #1 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #2 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #1 - #2 (*.?da)
2. Select Import File
Y:\PLA 2.0\Project.PEF
Select File
Results of Initial Analysis
Selected File: Y:\PLA 2.0\Project.PEF
Selected Format: PLA 2.x Enhanced Format
Analyzing the input file ...(Please wait)... complete.
Input file contains 40 valid objects.
Cancel
< Previous
Next >

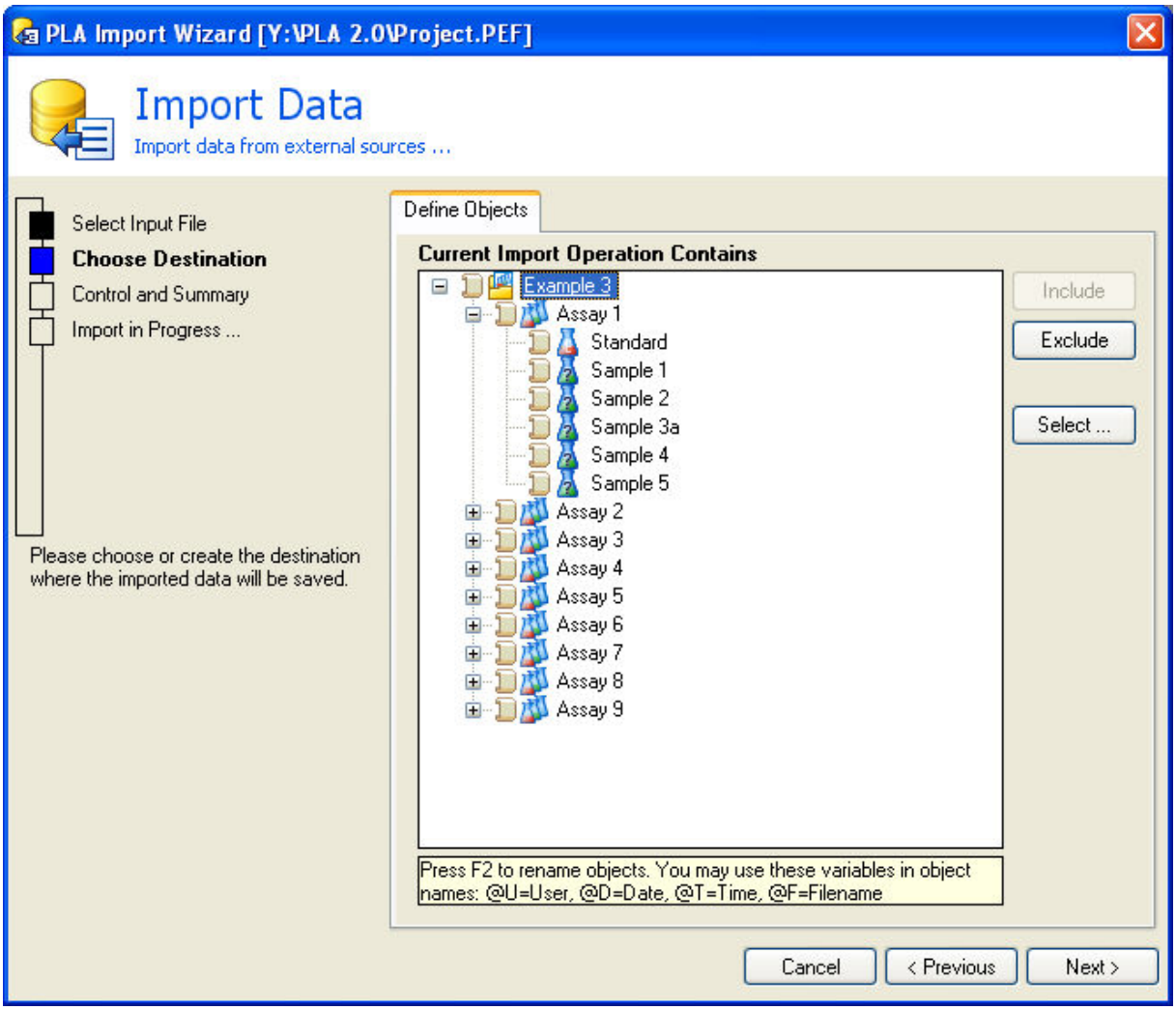
If the analysis is successful the **Next>** button gets activated. Our sample shows 40 valid objects.

If the selected file format requires a PLA Import Module to be executed, it will start automatically. You will see an result code of the external Import Module.

Press Next> to view the objects to be imported.

The Object Import Tree

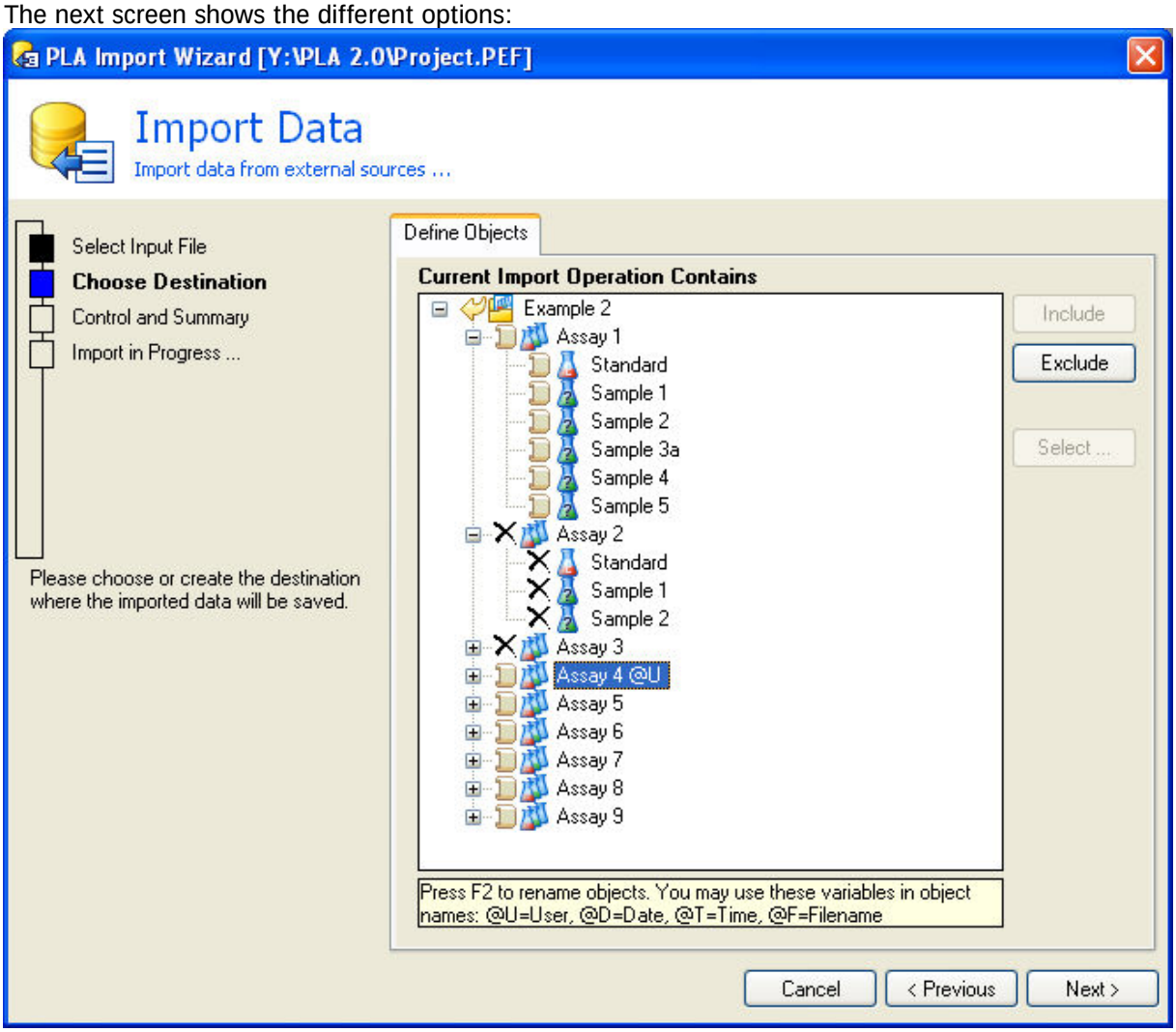
The PLA Import Wizard now displays the Import Tree:



On this page you have several options:

- Include and Exclude parts of the tree by selecting an object and pressing include and exclude buttons. Excluded objects are marked with a black cross.
- Select another parent for the assays. This allows to import the objects to a different target. If you selected an existing object as a target, this is noted by an arrow.
- Rename Objects by pressing F2. You may also insert variables into the name. These variable are useful if you want to create import definition schemes. The variables are replaced, when the import is executed. The variables available are: @U replaced with the name of the current user, @D replaced with the current date, @T replaced with the current time and @F which is replaced with the filename of the import file.

The next screen shows the different options:

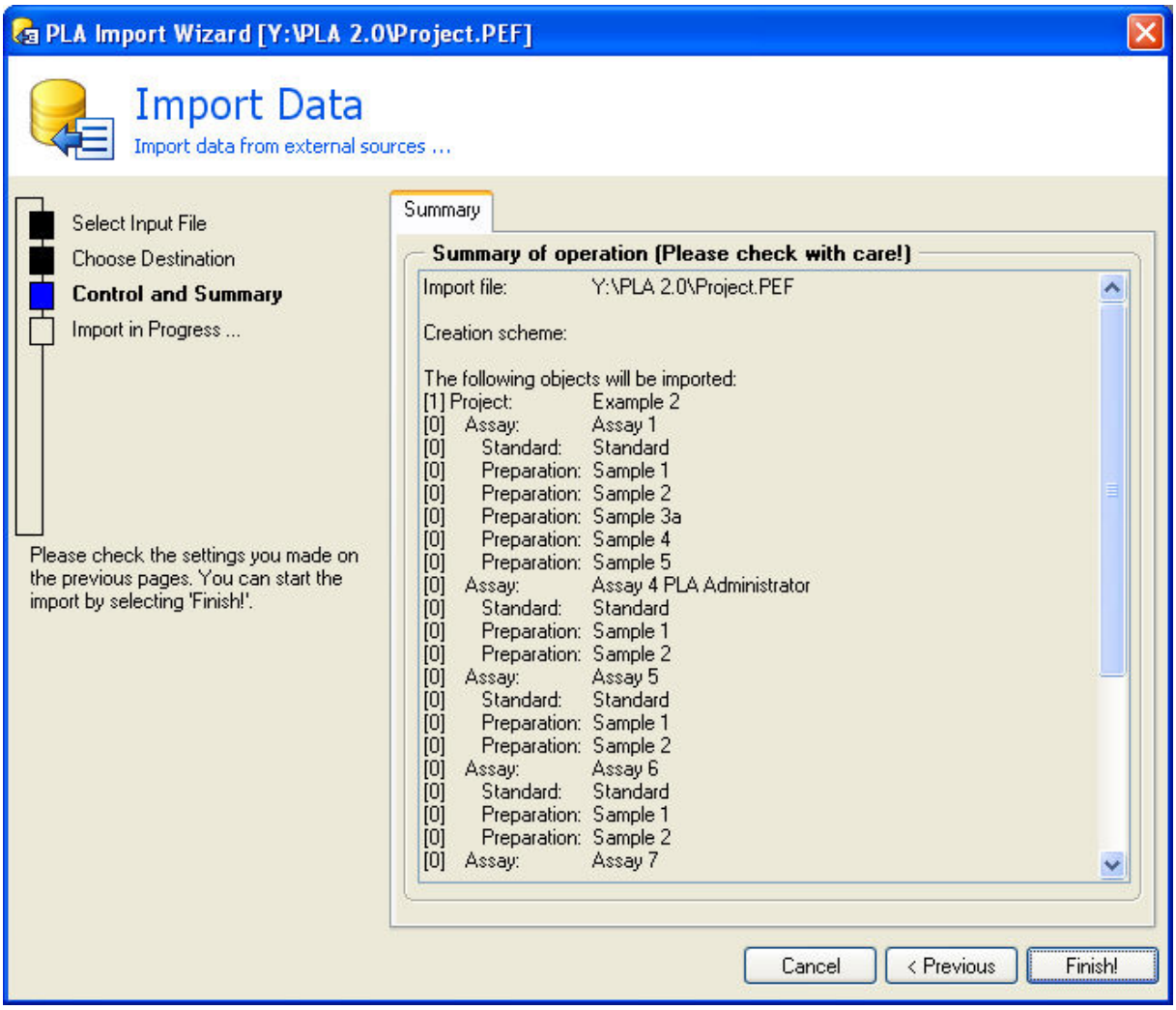


In this sample, an existing project "Example 2" is the target of the operation, Assay 2 and Assay 3 are excluded and Assay 4 is renamed to "Assay 4 @U" which show the usage of a variable.

Press Next> to see the summary page.

Summary

Your settings are displayed on the summary page for final control. When you are ready, press **Finish**, to start the Importation.

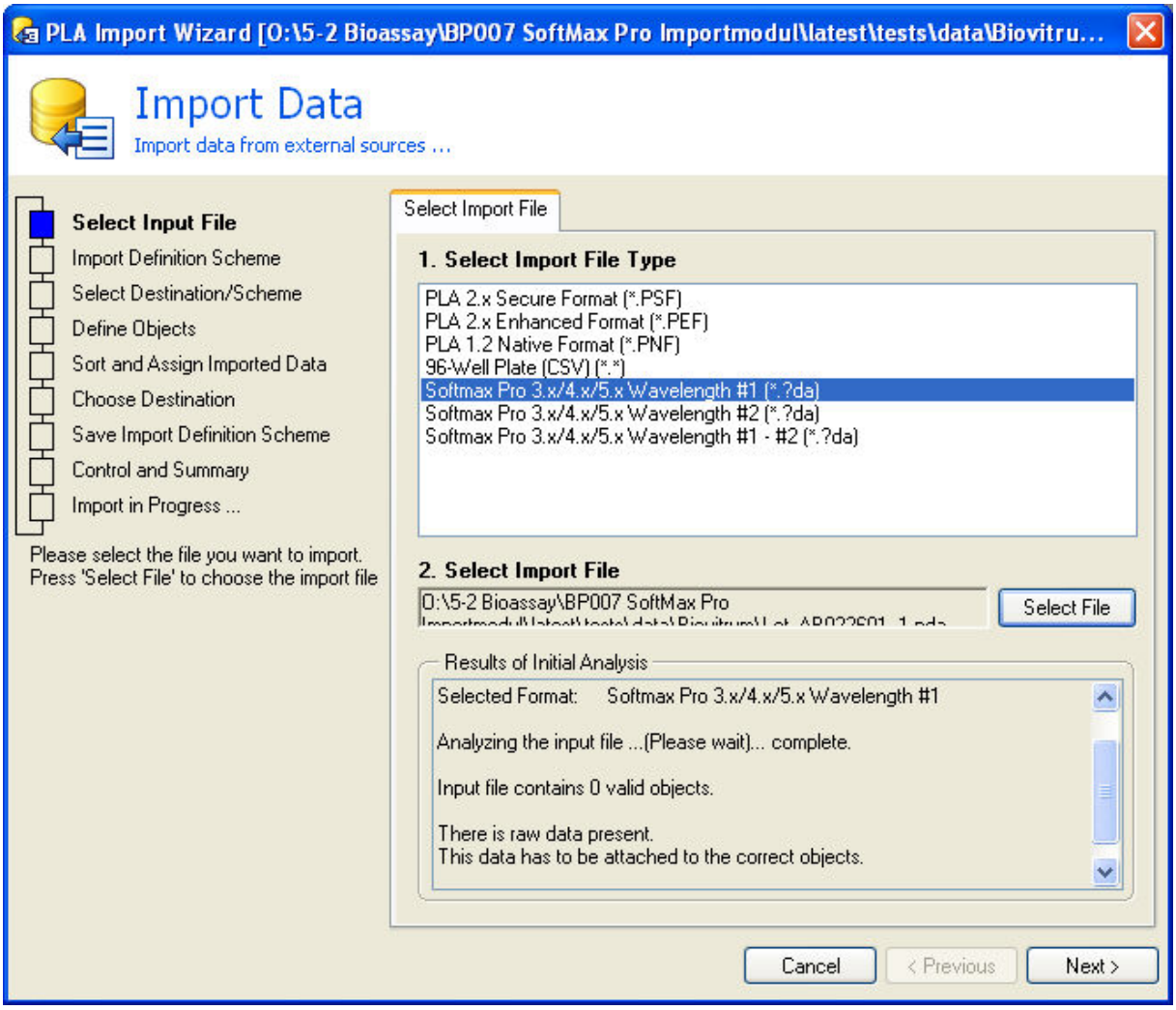

PLA Import Wizard [Y:\PLA 2.0\Project.PEF]
Import Data
Import data from external sources ...
Select Input File
Choose Destination
Control and Summary
Import in Progress ...
Please check the settings you made on the previous pages. You can start the import by selecting 'Finish!'.
Summary
Summary of operation (Please check with care!)
Import file: Y:\PLA 2.0\Project.PEF
Creation scheme:
The following objects will be imported:
[1] Project: Example 2
[0] Assay: Assay 1
[0] Standard: Standard
[0] Preparation: Sample 1
[0] Preparation: Sample 2
[0] Preparation: Sample 3a
[0] Preparation: Sample 4
[0] Preparation: Sample 5
[0] Assay: Assay 4 PLA Administrator
[0] Standard: Standard
[0] Preparation: Sample 1
[0] Preparation: Sample 2
[0] Assay: Assay 5
[0] Standard: Standard
[0] Preparation: Sample 1
[0] Preparation: Sample 2
[0] Assay: Assay 6
[0] Standard: Standard
[0] Preparation: Sample 1
[0] Preparation: Sample 2
[0] Assay: Assay 7
Cancel
< Previous
Finish!

After you press finish, the data is imported to PLA.

Raw Data Import

When you installed a PLA Import Module the import process may become more complex, since the Import Module might not be able to decide, how to deal with your raw data.

Start the import as a standard import. After you selected your file type and the input file the analysis section of the Import Wizard might contain the following information:

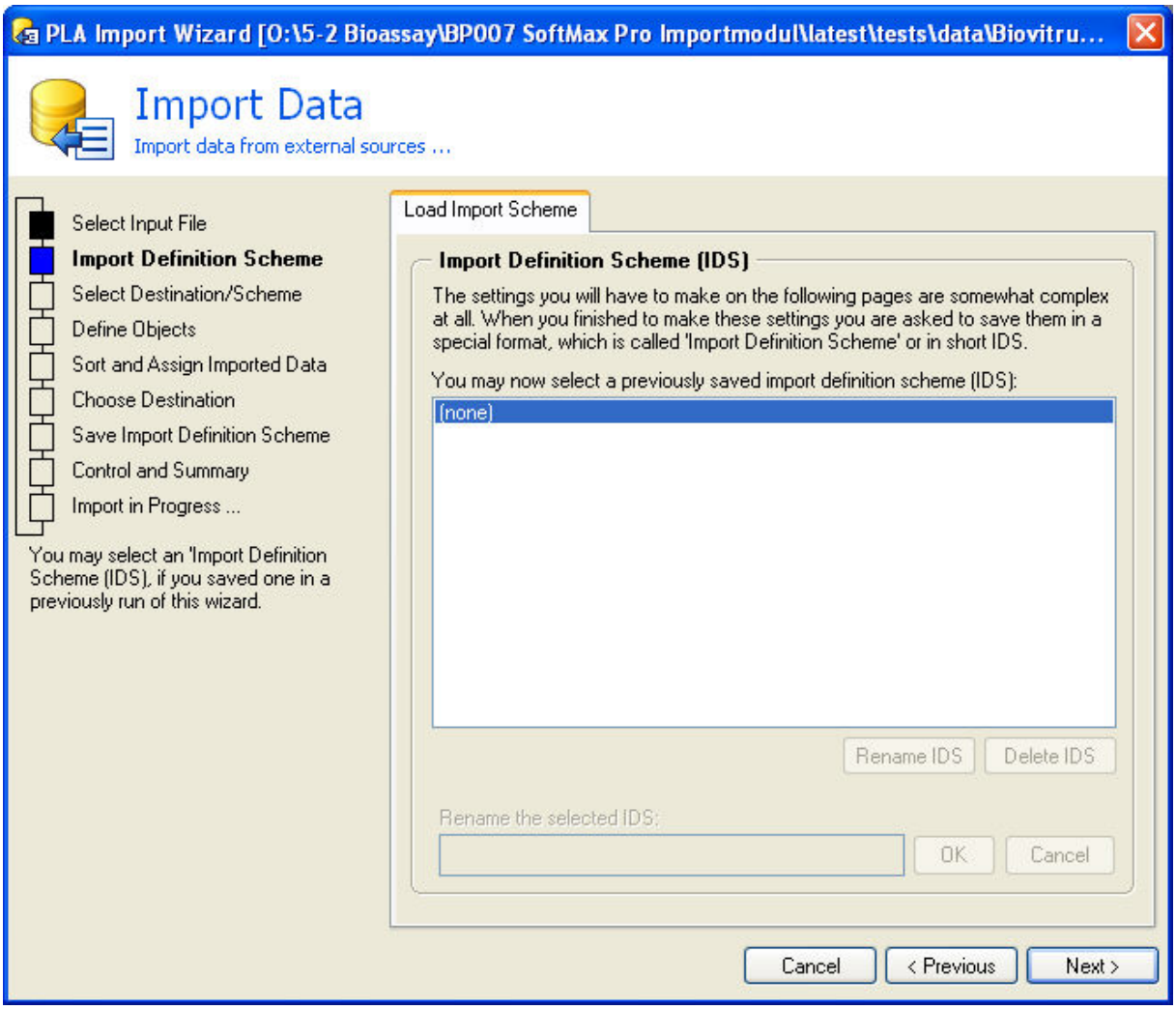

PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported Data
Choose Destination
Save Import Definition Scheme
Control and Summary
Import in Progress ...
Please select the file you want to import.
Press 'Select File' to choose the import file
Select Import File
1. Select Import File Type
PLA 2.x Secure Format (*.PSF)
PLA 2.x Enhanced Format (*.PEF)
PLA 1.2 Native Format (*.PNF)
96-Well Plate (CSV) (*.*)
Softmax Pro 3.x/4.x/5.x Wavelength #1 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #2 (*.?da)
Softmax Pro 3.x/4.x/5.x Wavelength #1 - #2 (*.?da)
2. Select Import File
O:\5-2 Bioassay\BP007 SoftMax Pro
Select File
Results of Initial Analysis
Selected Format: Softmax Pro 3.x/4.x/5.x Wavelength #1
Analyzing the input file ...(Please wait)... complete.
Input file contains 0 valid objects.
There is raw data present.
This data has to be attached to the correct objects.
Cancel
< Previous
Next >

Especially note the remark "There is raw data present." This raw data has to assigned to the required objects in PLA.

Now press Next> to start the import process.

Load Import Definition Scheme

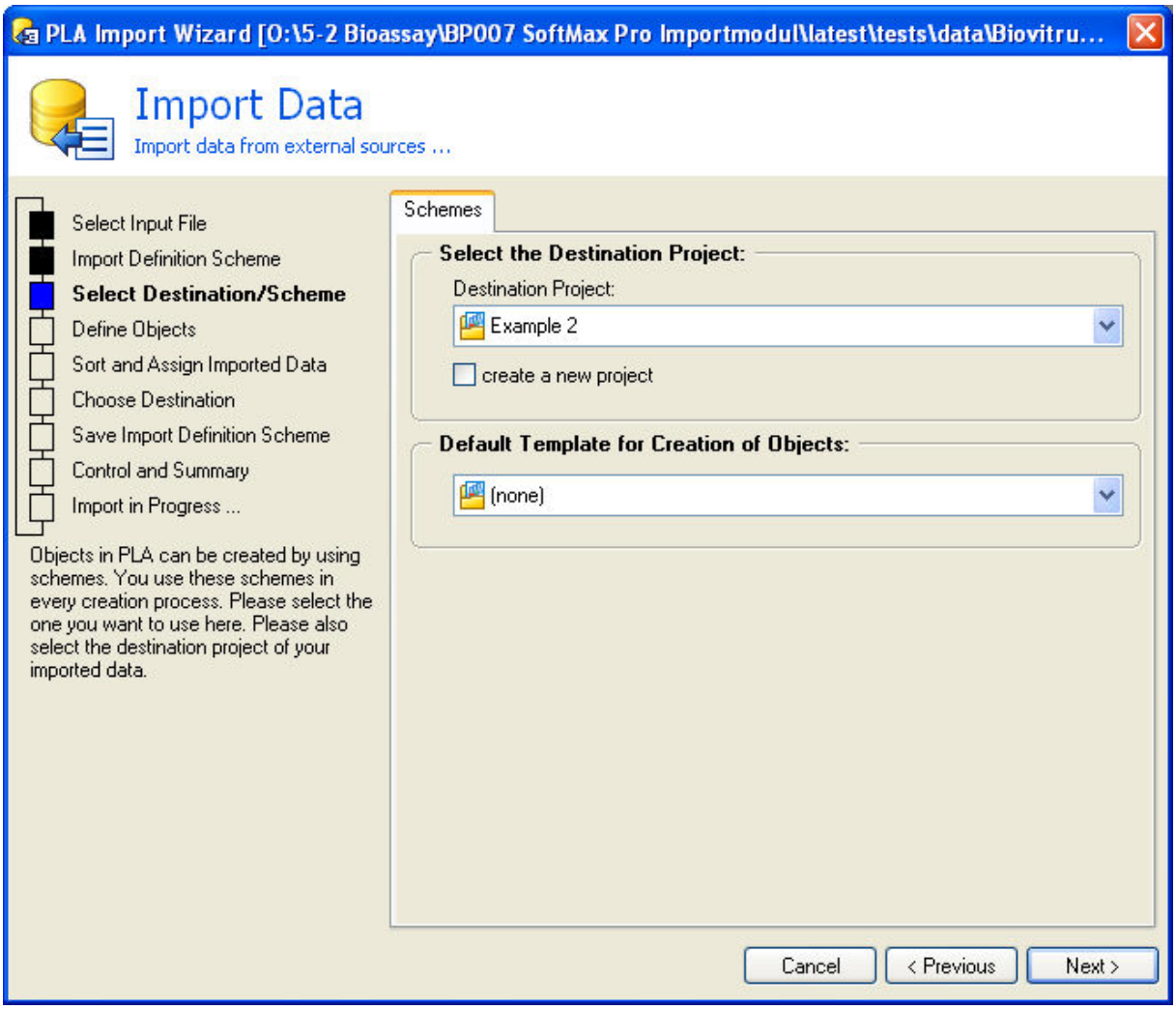
First of all you might load a previously saved import definition scheme (IDS). An IDS allows you to save all the steps of the following pages and to efficiently load external data. In our case no scheme is available yet. We will save our settings after we have defined everything.


PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported Data
Choose Destination
Save Import Definition Scheme
Control and Summary
Import in Progress ...
You may select an 'Import Definition Scheme (IDS), if you saved one in a previously run of this wizard.
Load Import Scheme
Import Definition Scheme (IDS)
The settings you will have to make on the following pages are somewhat complex at all. When you finished to make these settings you are asked to save them in a special format, which is called 'Import Definition Scheme' or in short IDS.
You may now select a previously saved import definition scheme (IDS):
(none)
Rename IDS
Delete IDS
Rename the selected IDS:
OK
Cancel
Cancel
< Previous
Next >

Press Next> to proceed.

Selection of Target Project and Templates

In this step you define the target of the operation (select a project or create a new one) and you have the option to select a defined template for the objects the import process will create. By doing so you are able to predefine all object properties of the new objects.

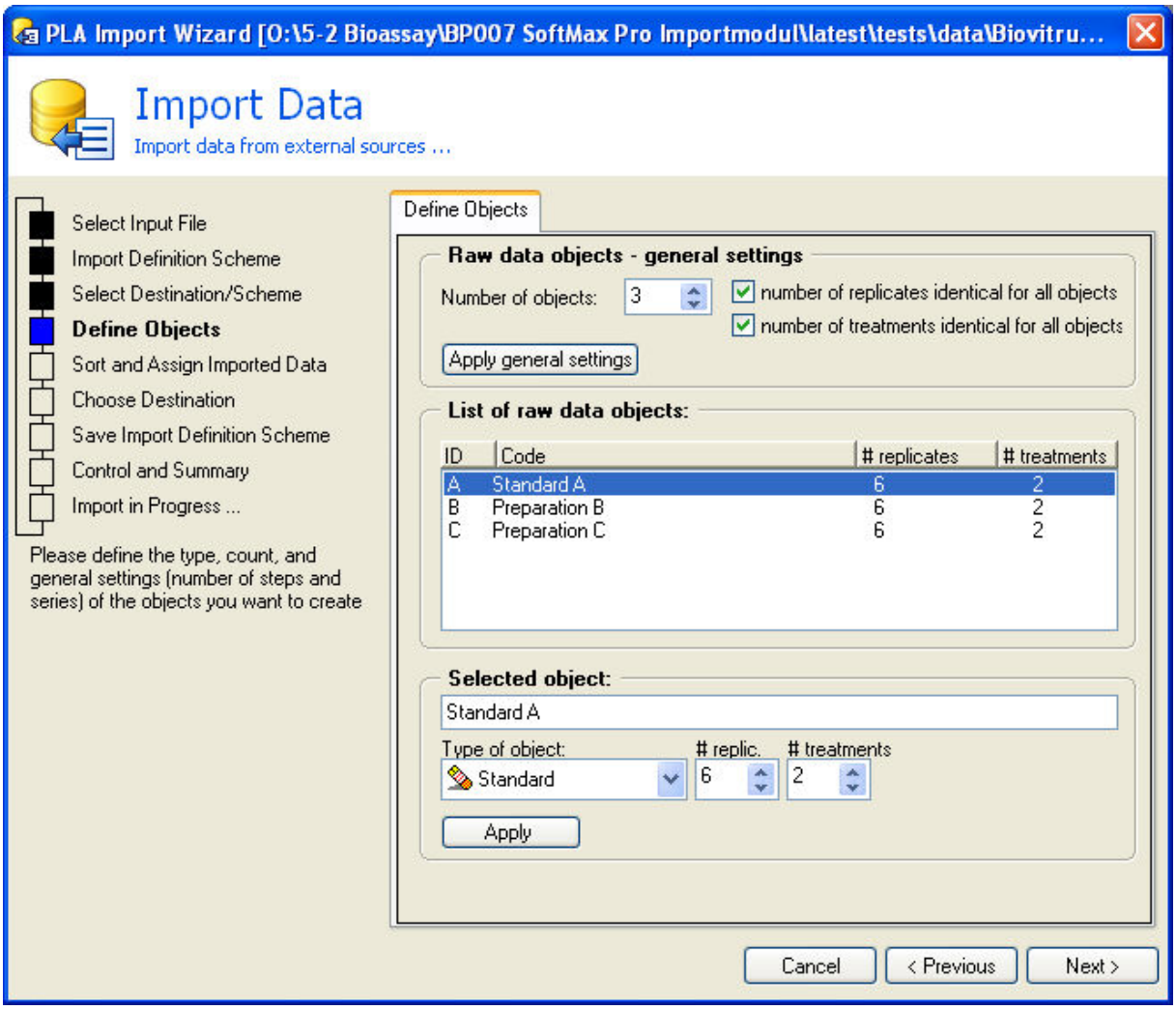

PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported Data
Choose Destination
Save Import Definition Scheme
Control and Summary
Import in Progress ...
Objects in PLA can be created by using schemes. You use these schemes in every creation process. Please select the one you want to use here. Please also select the destination project of your imported data.
Schemes
Select the Destination Project:
Destination Project:
Example 2
create a new project
Default Template for Creation of Objects:
(none)
Cancel
< Previous
Next >

Press Next> to continue.

Define Assay Dimensions

Now you have to define the number of target objects (standard, preparations, controls) for the assay you will create. Define the number of objects and press "Apply general settings".

The list of raw data objects now contains the desired number of objects. You edit each one, by selecting it. In the lower section "Object Details" you can modify the code of the object, its type (standard, preparation, control) and its dimension (number of replicates and treatments). Remember to press "Apply" to activate your settings after modification.


PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported Data
Choose Destination
Save Import Definition Scheme
Control and Summary
Import in Progress ...
Please define the type, count, and general settings (number of steps and series) of the objects you want to create
Define Objects
Raw data objects - general settings
Number of objects: 3
number of replicates identical for all objects
number of treatments identical for all objects
Apply general settings
List of raw data objects:
ID Code # replicates # treatments
A Standard A 6 2
B Preparation B 6 2
C Preparation C 6 2
Selected object:
Standard A
Type of object:
Standard
replic. 6
treatments 2
Apply
Cancel
< Previous
Next >

When the assay dimensions are correct, press Next> to continue.

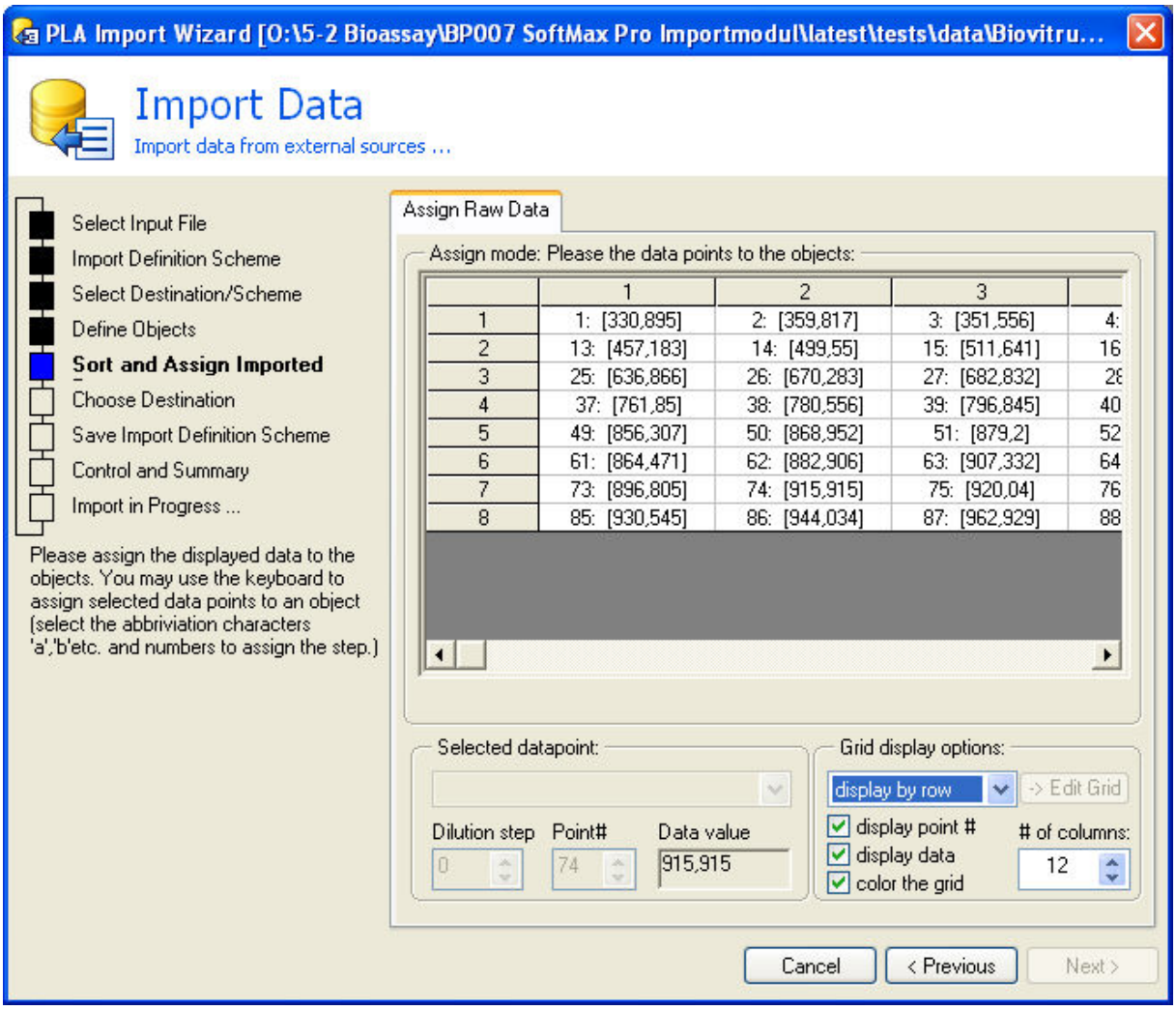
Bind the Raw Data to your Assay

Now you have to bind the raw data to your assay. The Import Wizard has several options to display your data.

Grid Display Options

By default the raw data is displayed in 12 columns. This leads to a correct display of a 96-well plate if you have 96 response values.

You have the option, to display the data point number and the response value itself. You may also switch the default display of the grid, if standard data display is different.

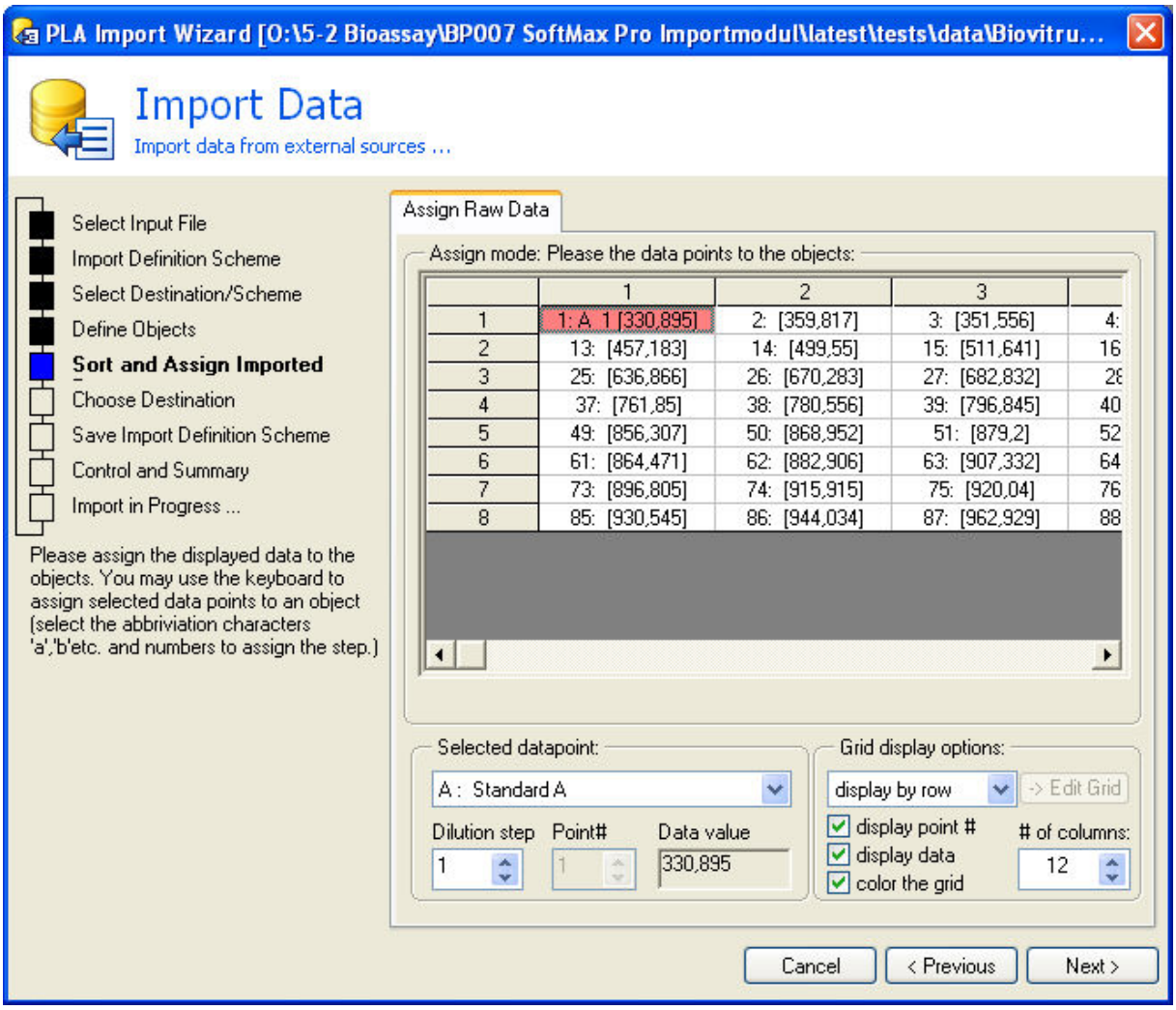


Assign the Raw Response Values

The next step is to assign the required values to a standard, preparation and control and to assign it to the corresponding dilution step. The dilution step value is assigned by the template, the parent object or later when you edit the object. In a 1 in 2 dilution series, the first step has the highest concentration.

Select the data point in the grid and then select the object and dilution step in the "Selected Datapoint" section:

In the following picture the response value in column 1 and row 1 is assigned to the standards first dilution step:



The data grid is automatically colored (if this activated in the grid display options). The data point is now displayed as

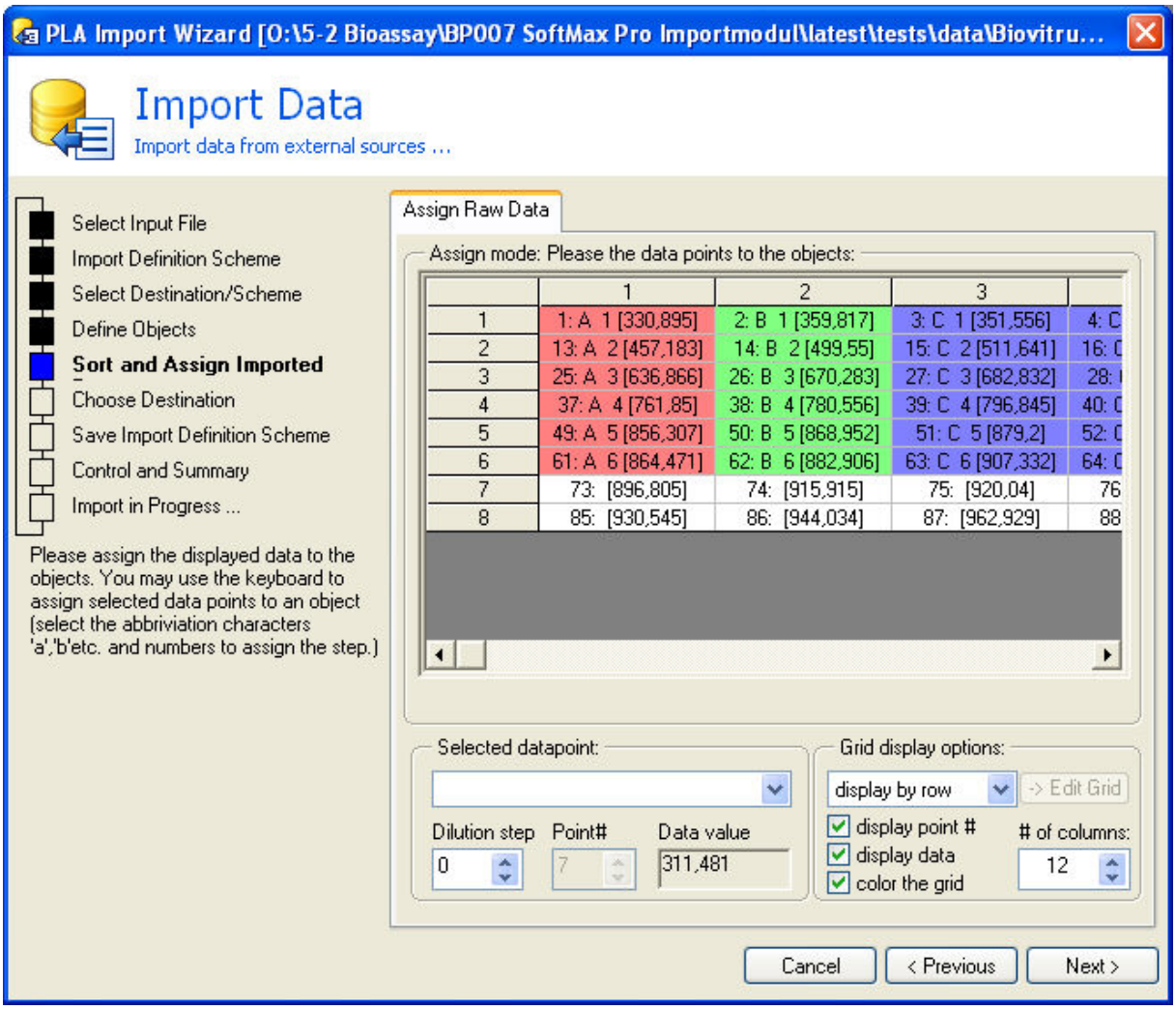
1: A 1 [330,895], which has to interpreted as follows: [point #]: Object_code Dilution_step [response_value]

Every object has an automatic assignment to a letter (starting with A) for the standard. Every letter has a color code. You can see the assignment of codes to the objects by opening the drop down list box in the selected datapoint section. The dilution steps are numbered.

Assignment by Keys

If you select multiple response values in the grid you may simply type the letter of the desired assignment, to assign values to an object. By type a space, you remove the assignment. By pressing 1 - 9 you assign a selected response value to a dilution step. By pressing 0 you remove the assignment to a step. This allows you to select your block designs and assign them to the response values in a hurry.

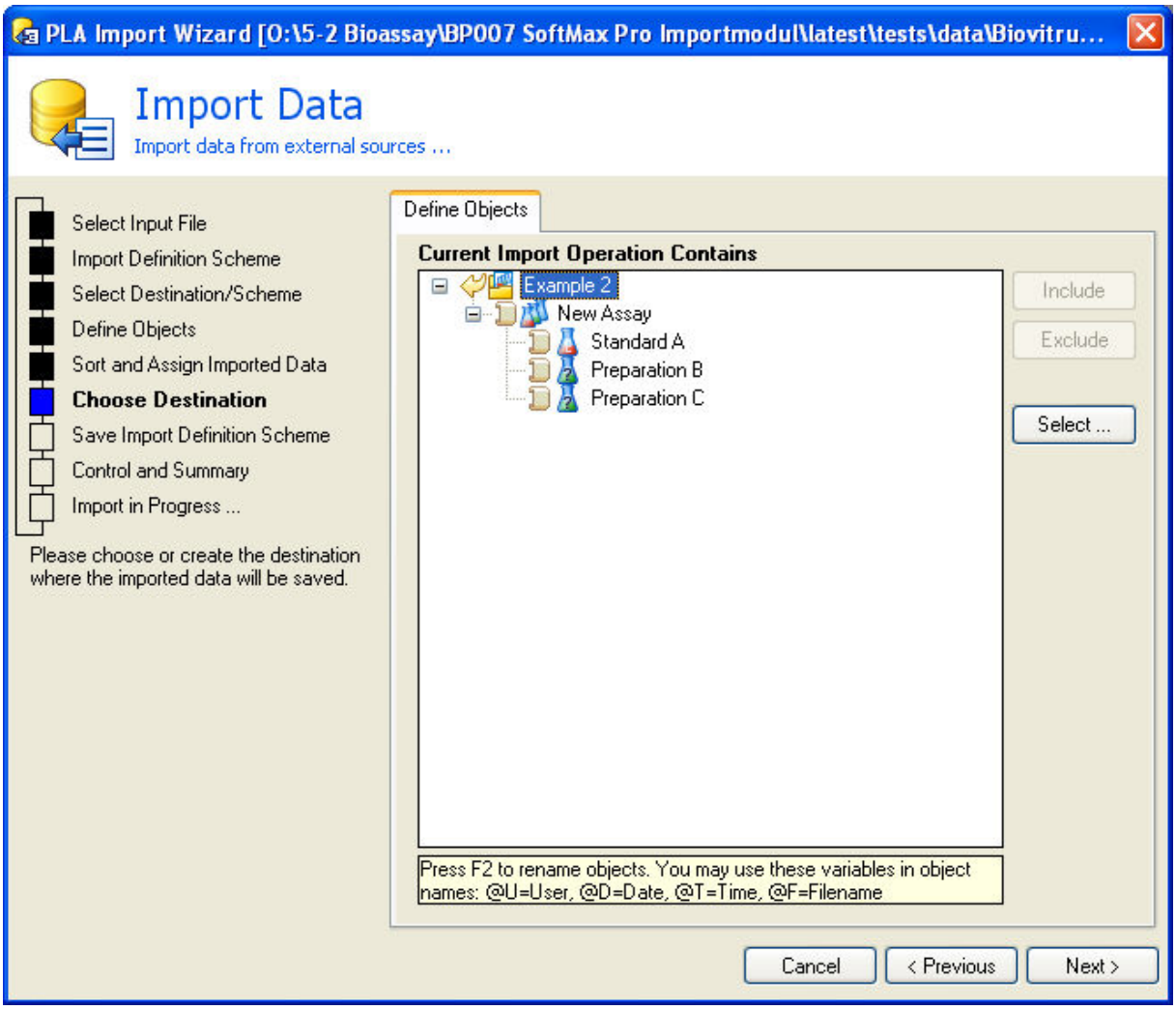
The next picture shows a sample assignment:


PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported
Choose Destination
Save Import Definition Scheme
Control and Summary
Import in Progress ...
Please assign the displayed data to the objects. You may use the keyboard to assign selected data points to an object (select the abbriviation characters 'a','b'etc. and numbers to assign the step.)
Assign Raw Data
Assign mode: Please the data points to the objects:
1 2 3
1 1: A 1 [330,895] 2: B 1 [359,817] 3: C 1 [351,556]
2 13: A 2 [457,183] 14: B 2 [499,55] 15: C 2 [511,641]
3 25: A 3 [636,866] 26: B 3 [670,283] 27: C 3 [682,832]
4 37: A 4 [761,85] 38: B 4 [780,556] 39: C 4 [796,845]
5 49: A 5 [856,307] 50: B 5 [868,952] 51: C 5 [879,2]
6 61: A 6 [864,471] 62: B 6 [882,906] 63: C 6 [907,332]
7 73: [896,805] 74: [915,915] 75: [920,04]
8 85: [930,545] 86: [944,034] 87: [962,929]
Selected datapoint:
Dilution step
Point#
Data value
0
7
311,481
Grid display options:
display by row
-> Edit Grid
display point #
display data
color the grid
# of columns:
12
Cancel
< Previous
Next >

When you have finished your assignments, and there no errors (which are displayed in the dialog) the Next> button is activated.

The Object Import Tree

The PLA Import Wizard now displays the Import Tree:

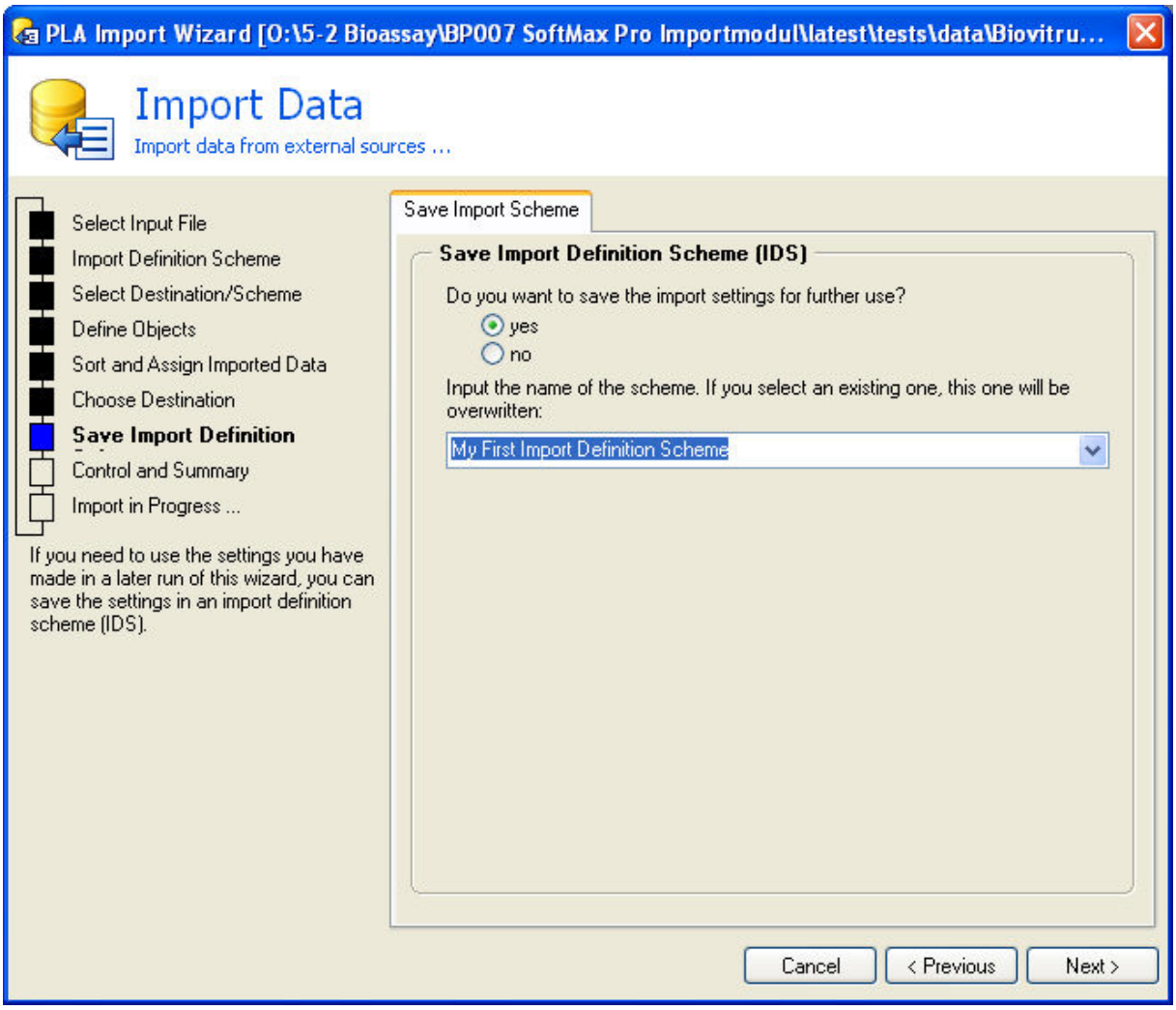


On this page you have several options:

- Include and Exclude parts of the tree by selecting an object and pressing include and exclude buttons. Excluded objects are marked with a black cross.
- Select another parent for the assays. This allows to import the objects to a different target. If you selected an existing object as a target, this is noted by an arrow.
- Rename Objects by pressing F2. You may also insert variables into the name. These variable are useful if you want to create import definition schemes. The variables are replaced, when the import is executed. The variables available are: @U replaced with the name of the current user, @D replaced with the current date, @T replaced with the current time and @F which is replaced with the filename of the import file.

Save the Import Definition Scheme (IDS)

On this page you have the option to save your selection in an Import Definition Scheme. This scheme contains all of your selections especially the raw data assignments. If you save it, it will available on your next import with this file type. Note: the IDS is saved in the PTD-file of your Import Module. PLA needs write access to this file.


PLA Import Wizard [O:\5-2 Bioassay\BP007 SoftMax Pro Importmodul\latest\tests\data\Biovitru...
Import Data
Import data from external sources ...
Select Input File
Import Definition Scheme
Select Destination/Scheme
Define Objects
Sort and Assign Imported Data
Choose Destination
Save Import Definition
Control and Summary
Import in Progress ...
If you need to use the settings you have made in a later run of this wizard, you can save the settings in an import definition scheme (IDS).
Save Import Scheme
Save Import Definition Scheme (IDS)
Do you want to save the import settings for further use?
yes
no
Input the name of the scheme. If you select an existing one, this one will be overwritten:
My First Import Definition Scheme
Cancel
< Previous
Next >

Summary

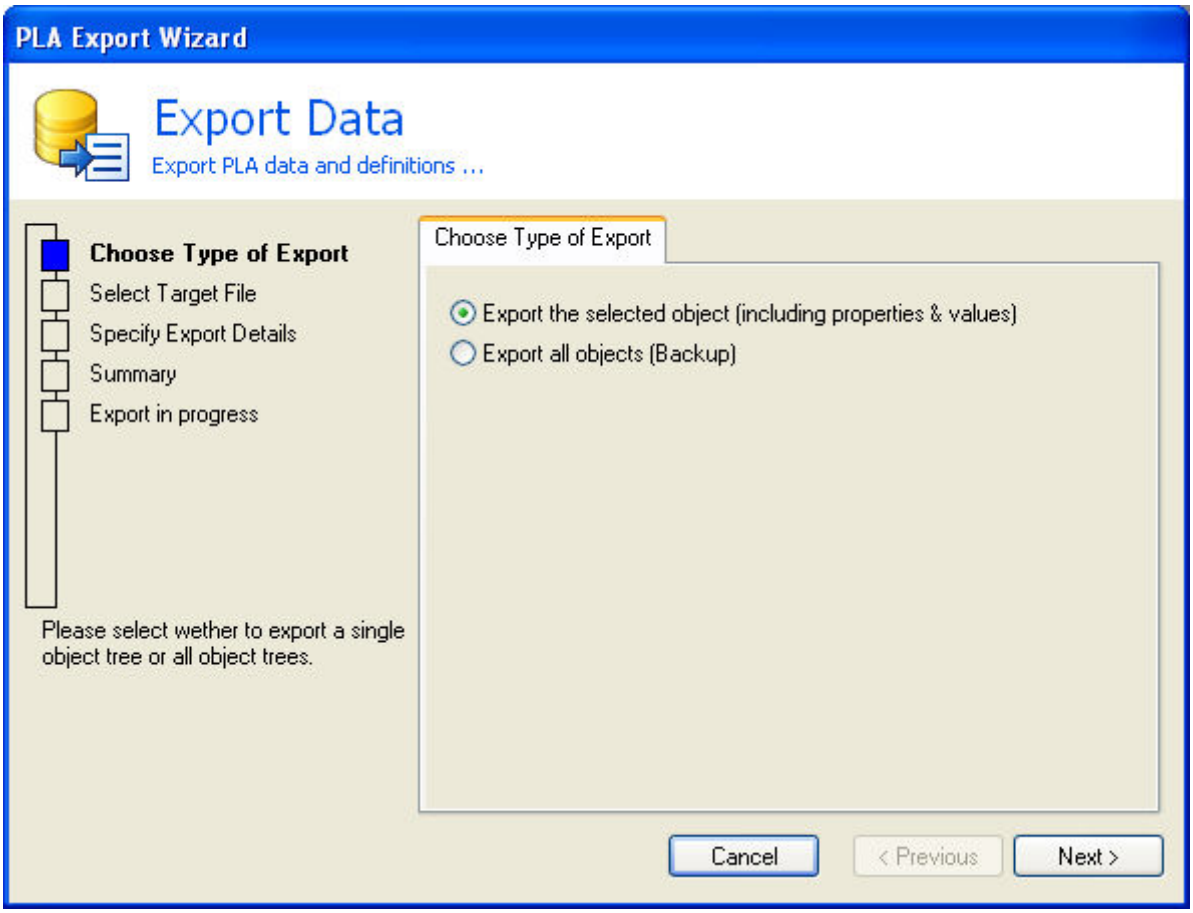
On the summary page parts of your selections are summarized. Press Execute to start the import process.

Export

The Export process is very easy. It follows a simple path:

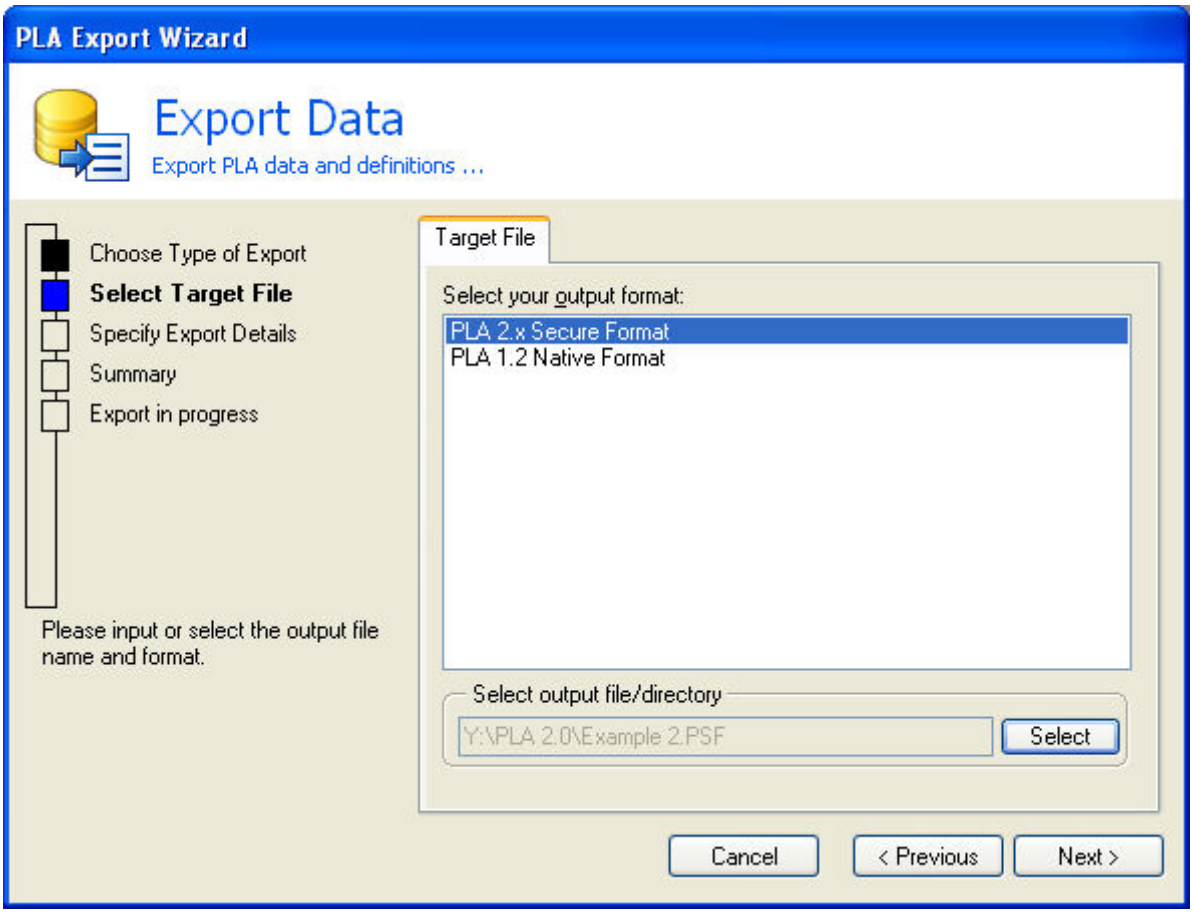
Select the Export Object

In the navigator select the object, you want to export. Then select Export from the file menu, the navigator context menu or from the toolbar. The Export Wizard is displayed.

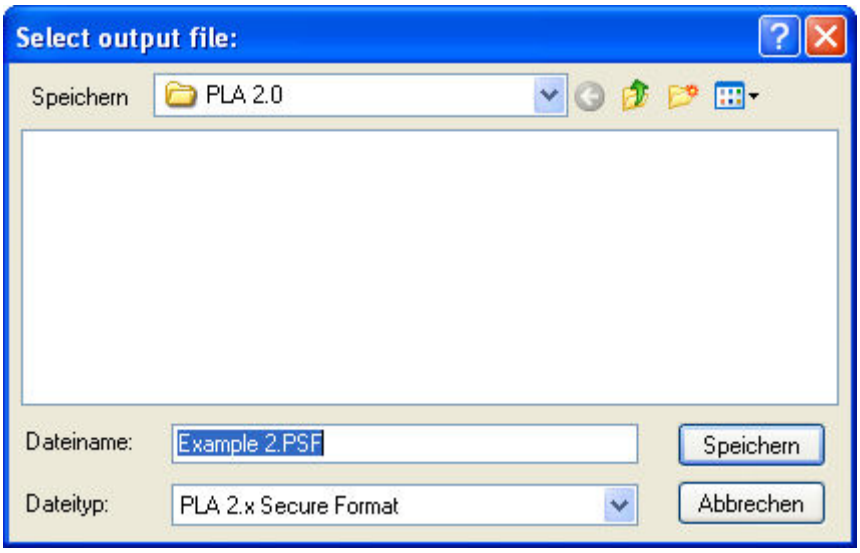

PLA Export Wizard
Export Data
Export PLA data and definitions ...
Choose Type of Export
Select Target File
Specify Export Details
Summary
Export in progress
Please select wether to export a single object tree or all object trees.
Choose Type of Export
Export the selected object (including properties & values)
Export all objects (Backup)
Cancel
< Previous
Next >

Now you have the option to export all objects, or the selected object of the navigator. Press Next> to display the file type selection.

Select the File Type and Select an Export File



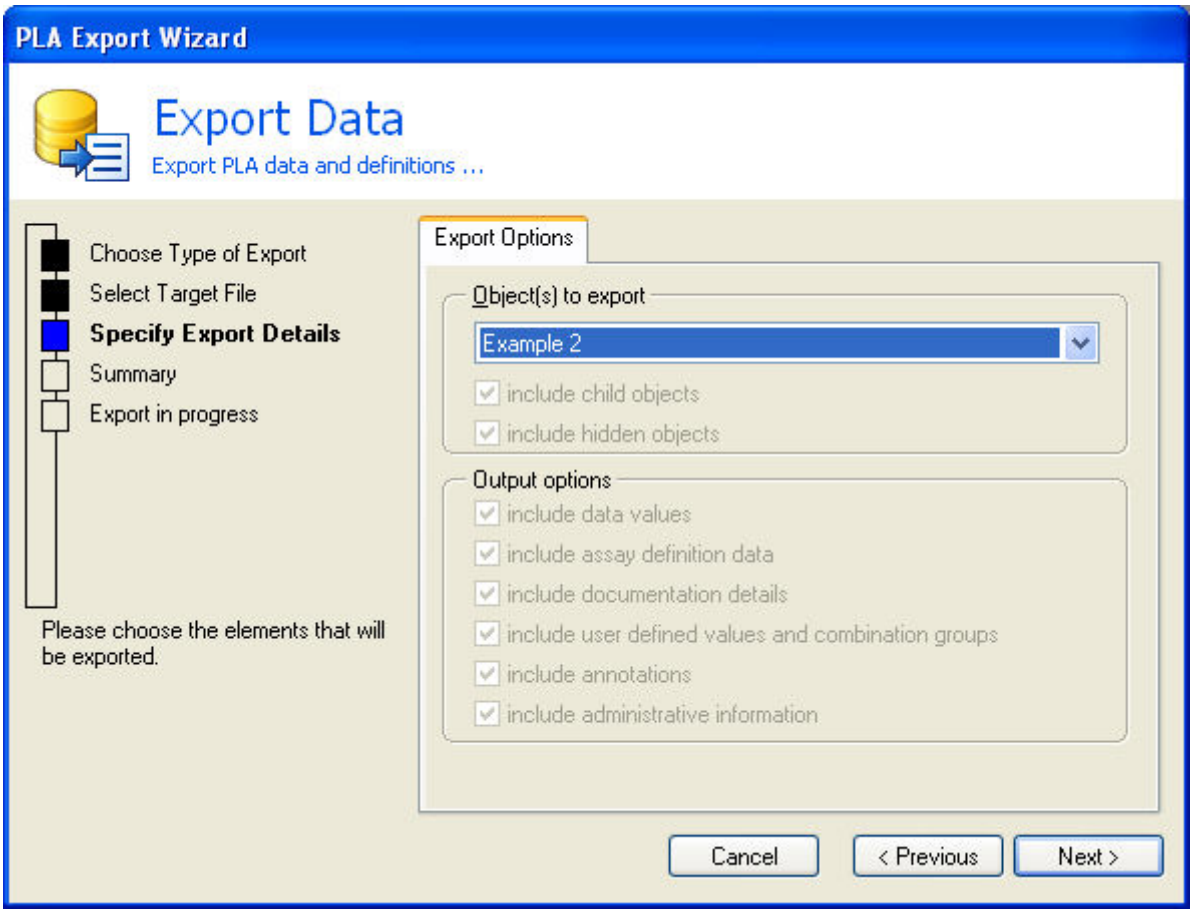
Select the file format you want to use and then press "Select" to open a Save dialog of the operating system:



Type in a file name and press "Save". In the Export Wizard press Next> to switch to the Export Details page.

Export Details

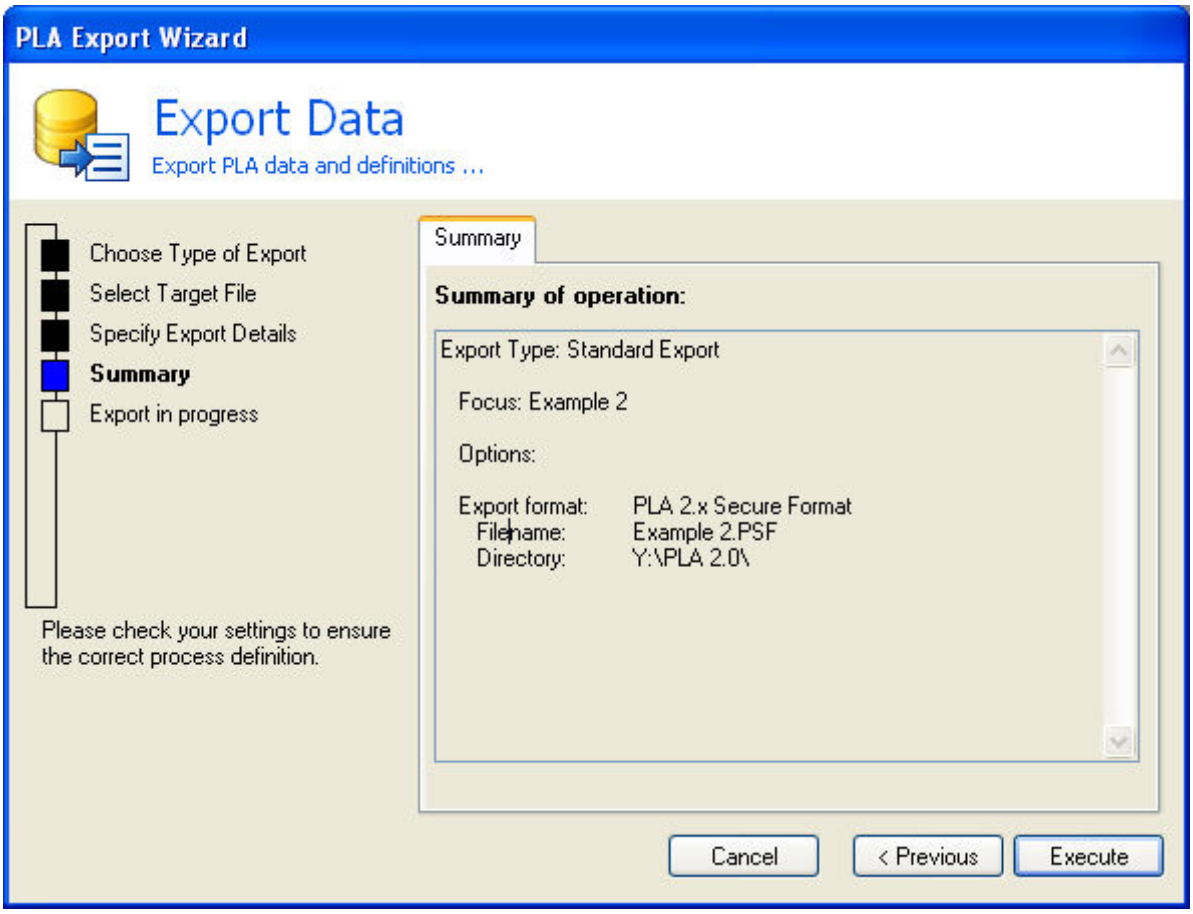
Depending on your selected export format, you may select the information details to export.



The PLA Secure Format and the PLA External Format do not allow to select details. Press Next> to continue.

Summary

On the summary page you can verify your Export details. Press Execute to start the export process. You will be notified when it is finished.


PLA Export Wizard
Export Data
Export PLA data and definitions ...
Choose Type of Export
Select Target File
Specify Export Details
Summary
Export in progress
Please check your settings to ensure the correct process definition.
Summary
Summary of operation:
Export Type: Standard Export
Focus: Example 2
Options:
Export format: PLA 2.x Secure Format
Filename: Example 2.PSF
Directory: Y:\PLA 2.0\
Cancel
< Previous
Execute

Object Properties

Introduction

The representation of projects, assays, standards, preparations and controls are generally called objects in this manual. The object properties can be divided into different sets of information. They are represented as property pages in the object editor dialog.

- **General Properties**
  contain general information about the specific object.

- **Dose Properties**
  define the potency and doses of a specific measurement object

- **Data Properties**
  define the dimensions of the response value matrix and allow the input of the dose and response values

- **Analysis Properties**
  are the details of the calculation parameters

- **Configuration Properties**
  fine tune the configuration selection in PLA

- **Documentation Properties**
  allow the specification of various kinds of meta data for your assays

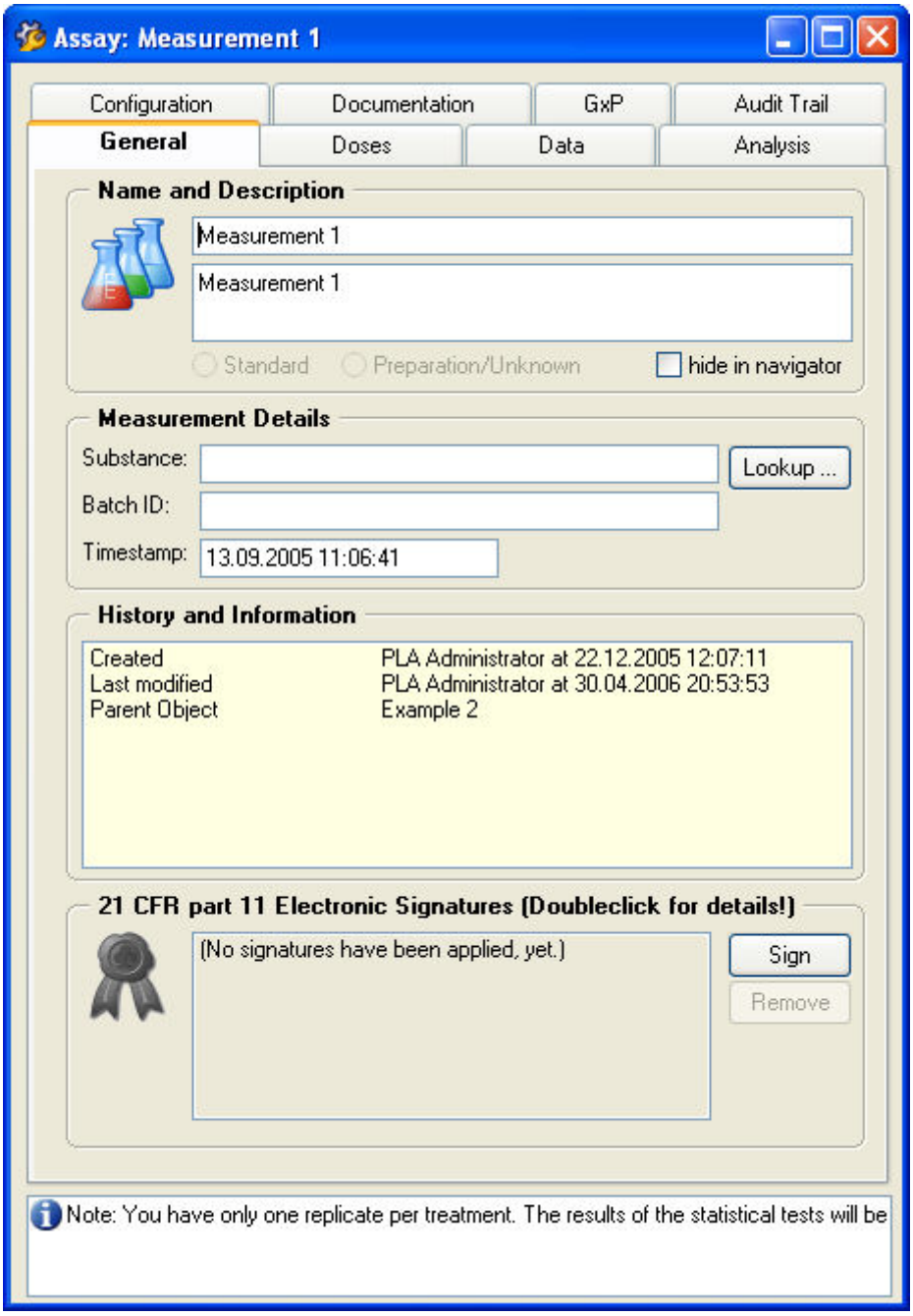
- **GxP Options**
  allow to protect groups of properties from manipulation

General Properties

General properties describe management information for an object.

Property	Description
Name and Description	
Name	Name of the object with up to 50 characters
Description	Detailed Description of the object. Up to 255 characters.
Standard/Preparation selector	allows to switch the object types of standards and preparations
hide in navigator	hide the object from the navigator and from calculation
Measurement Details	
Substance	The measured substance whose potency shall be calculated. (Optional)
Batch ID	Batch Identification of the measured substance (Optional)
Timestamp	Date and time when the measurement has been done
Electronic Signatures	
Electronic Signatures	Electronic Signatures that have been applied to the object.

Figure: Screen Layout of the General Properties

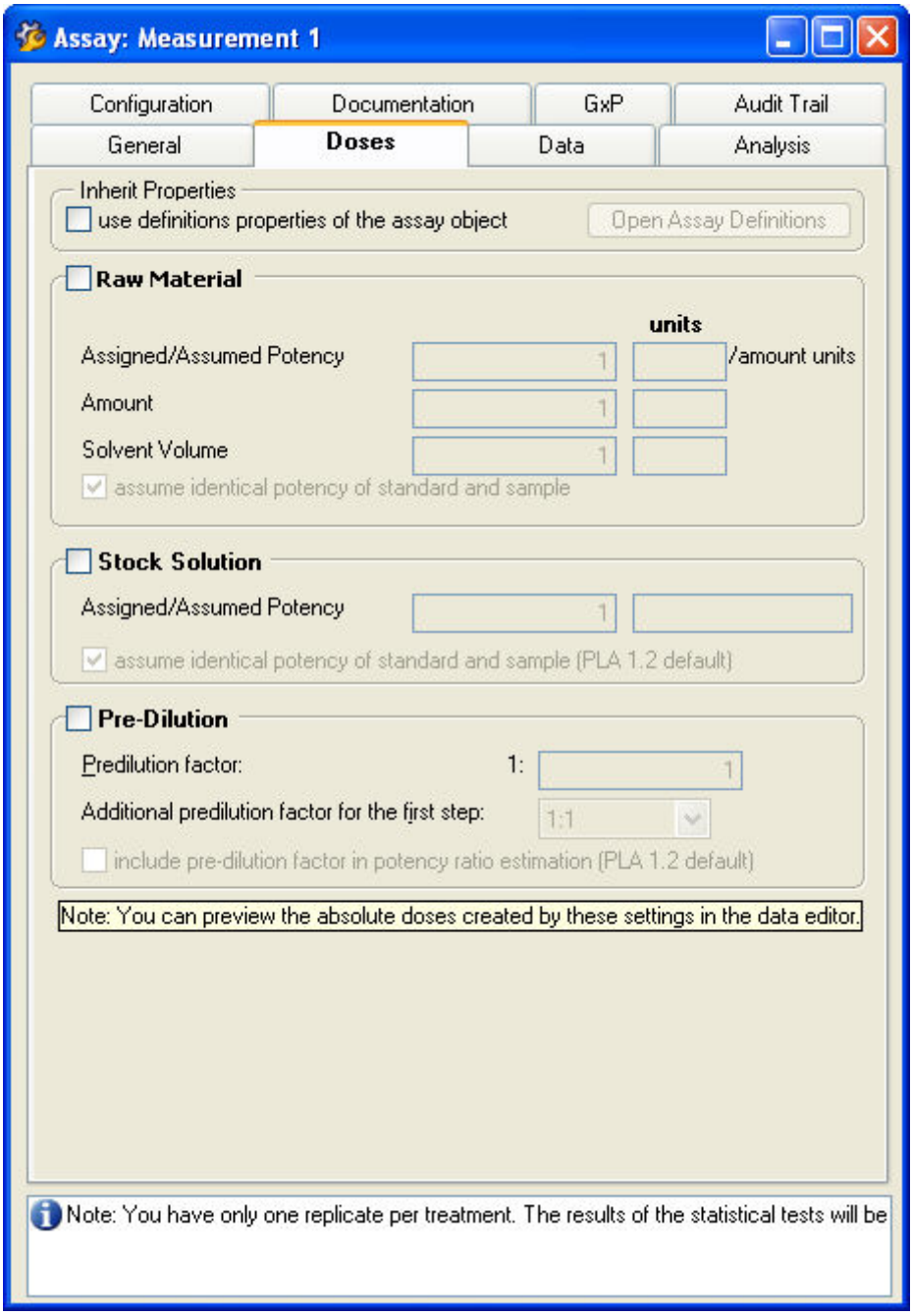

Assay: Measurement 1
Configuration
Documentation
GxP
Audit Trail
General
Doses
Data
Analysis
Name and Description
Measurement 1
Measurement 1
Standard
Preparation/Unknown
hide in navigator
Measurement Details
Substance:
Lookup ...
Batch ID:
Timestamp:
13.09.2005 11:06:41
History and Information
Created
PLA Administrator at 22.12.2005 12:07:11
Last modified
PLA Administrator at 30.04.2006 20:53:53
Parent Object
Example 2
21 CFR part 11 Electronic Signatures (Doubleclick for details!)
(No signatures have been applied, yet.)
Sign
Remove
Note: You have only one replicate per treatment. The results of the statistical tests will be

Dose Properties

Dose properties describe the way an standard or preparation is prepared for analysis. They allow the definition of raw material or stock solution potencies. If defined, PLA calculates the potency factors for these potencies.

Property	Description
Raw Material	
Raw Material	A raw material / bulk substance potency will be given. The calculation results will contain a potency estimation for the raw material
Assigned/Assumed Potency	The potency of the raw material given as a number and the numerator of the units. E.g. if the potency is 5 IU/ug type in 5 and IU. The denominator has to be given in the amount units.
Amount	The amount of raw material used. In the above example the amount has to be given in ug.
Solvent Volume	The volume in which the used amount of raw material is solved to give the stock solution. Type in the volume and the volume units.
Assume identical potency of standard and preparation	The assumed potency of the preparation raw material is identical with the assigned potency of the standard.
Stock Solution	
Stock Solution	A stock solution potency is given. The calculation results will contain a potency estimation for this stock solution
Assigned/Assumed Potency	The potency of the stock solution given as a number and a unit string.
Assume identical potency of standard and preparation	The assumed potency of the preparation raw material is identical with the assigned potency of the standard.
Pre-Dilution	
Pre-Dilution	Pre-Dilution factors are given. The pre-dilution factors define factors between the stock solution concentration and the concentration of the dilution series
Pre-Dilution Factor	The Pre-Dilution factor given as a fraction.
Additional Pre-Dilution Factor	A second pre-dilution factor given as a fraction.
Include Pre-Dilution Factor in potency ratio estimation	If checked the pre-dilutions are included in the calculations. (Check carefully!)

Figure: Screen layout of the Dose Properties


Assay: Measurement 1
Configuration
Documentation
GxP
Audit Trail
General
Doses
Data
Analysis
Inherit Properties
use definitions properties of the assay object
Open Assay Definitions
Raw Material
units
Assigned/Assumed Potency
1
/amount units
Amount
1
Solvent Volume
1
assume identical potency of standard and sample
Stock Solution
Assigned/Assumed Potency
1
assume identical potency of standard and sample (PLA 1.2 default)
Pre-Dilution
Predilution factor:
1:
1
Additional predilution factor for the first step:
1:1
include pre-dilution factor in potency ratio estimation (PLA 1.2 default)
Note: You can preview the absolute doses created by these settings in the data editor.
Note: You have only one replicate per treatment. The results of the statistical tests will be

Data Properties

Data Properties define the dimension and data values of a standard or preparation.

Property	Description
Dimension and Dilution Scale	
Number of Treatments	The number of treatments (dilution steps) in this object.
Number of Replicates	The number of replicates in the object
Dilution Scale	"1 in 2 series" or "direct input"
Data Values	
Data	Depending on the dilution scale property you edit the dose and response values

Figure: Screen Layout of the Data Properties

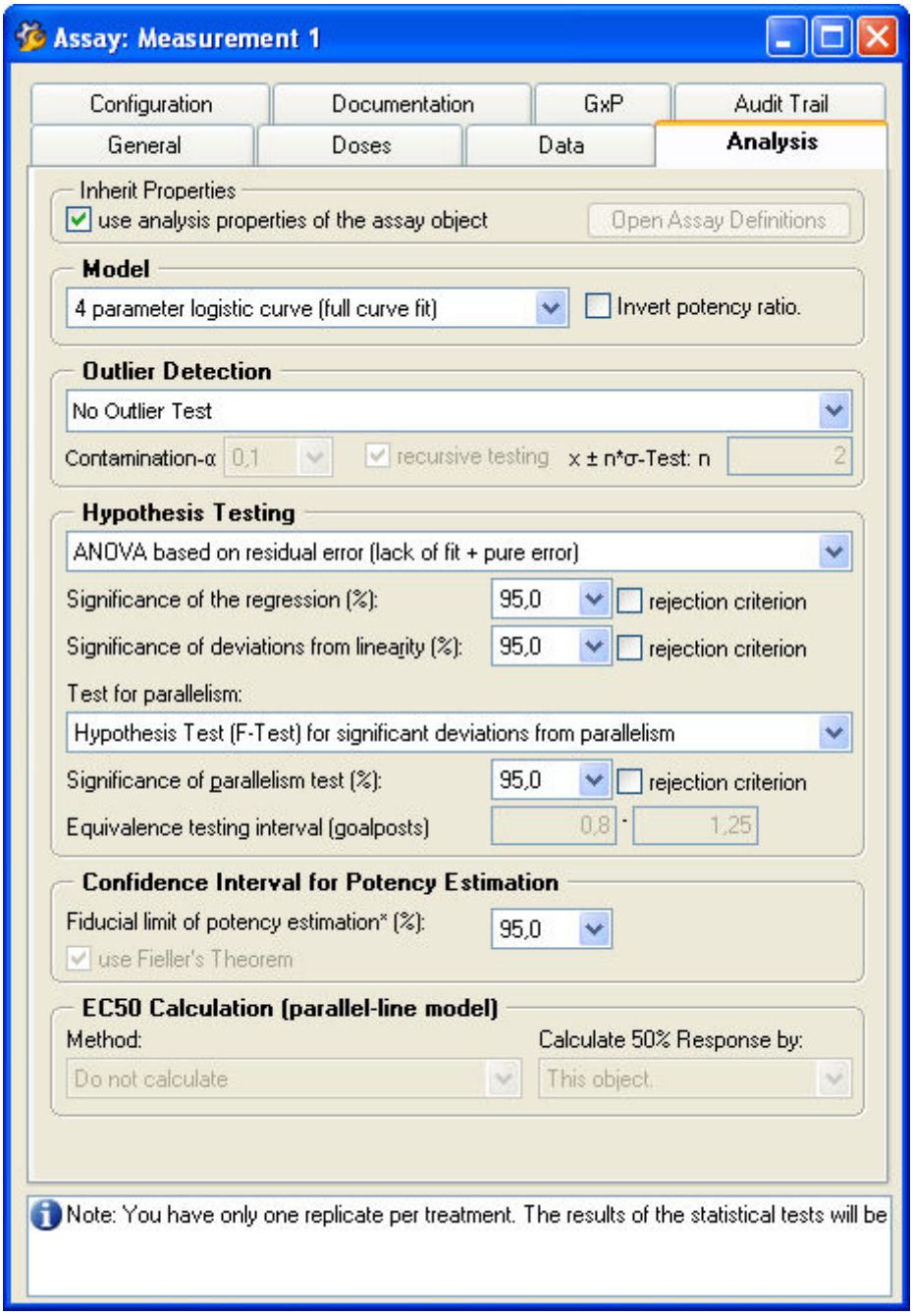
Analysis Properties

The analysis properties describe details of the potency calculation.
Note: The effective values of the properties marked with a star (*) are those of the corresponding preparation object. The effective values marked with a double star (**) are taken from the standard or preparation when the Separate ANOVAs are chosen, they are from the preparation in the other cases.

Property	Description
Model	
Model *	Select the Regression Model for the analysis. • Parallel-Line Model, Linear Response • Parallel-Line Model, Logarithmic Response Transformation • Parallel-Line Model, Square Root Response Transformation • Parallel-Line Model, Square Response Transformation • 4-Parameter Logistic Curve • 5-Parameter Logistic Curve
Invert Potency Ratio *	Check to invert the potency ratio after calculation.
Outlier Detection	
Method	Select the Outlier Detection Method: • None • Dixon Test • Grubb's Test • Test based on Standard Deviation • Studentized Residuals (not available for controls)
Contamination alpha	Sensitivity of the outlier method (not available for Standard Deviation Method)
recursive testing	execute the outlier tests recursive. (Only for Dixon and Grubb's Method)
n	Multiplicator for Standard Deviation test
Hypothesis Testing	
ANOVA Model *	The ANOVA model for the analysis: • ANOVA based on Pure Error Separation • ANOVA Residual Error • Separate ANOVAs for each hypothesis (PLA 1.2 compatible)
Regression Significance **	Significance of the F-Test for Regression
rejection criterion **	reject assay if F-Test of regression failed
Linearity Significance **	Significance of the F-Test for deviations from linearity
rejection criterion **	reject assay if F-Test of linearity failed
Test for Parallelism *	The parallelism test method: F-Test, Equivalence Test Ratio of Slopes, Equivalence Test Difference of Slopes
Significance of Parallelism Tests *	Significance level for the selected parallelism test method
rejection criterion *	reject assay if test of parallelism fails

Equivalence Testing Goalpost *	The upper and lower goalpoast of the equivalence test.
Confidence Interval	
Confidence Interval	The confidence interval of the potency estimation
Fieller's Theorem	use Fieller's Theorem instead of the standard confidence interval (requires linear regression)
EC50 Method	
EC50 Method	Which regression is to be used for the EC50 calculation
Response 50 Calculation	How is the response 50 calculated

Figure: Screen Layout of the Analysis Properties

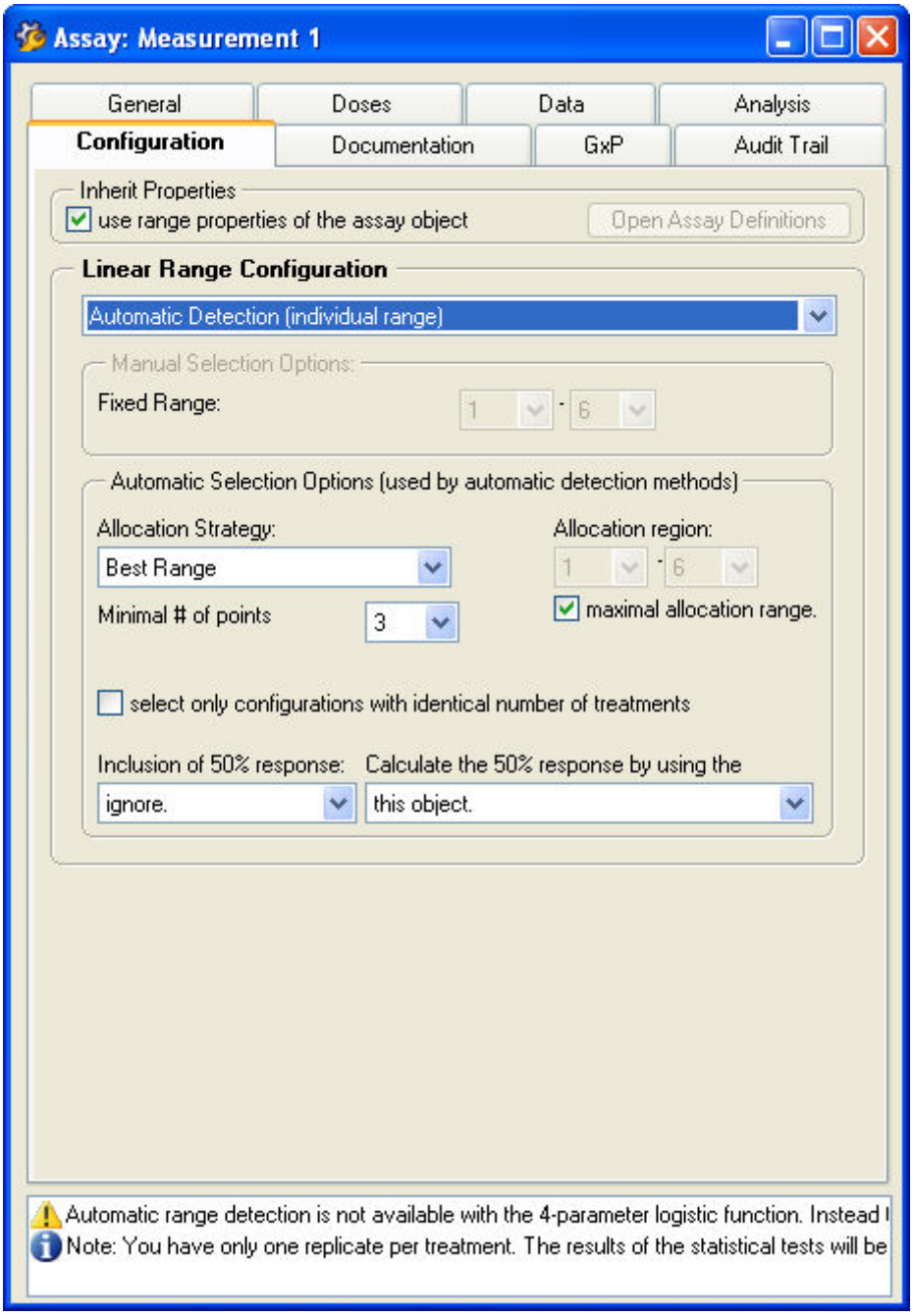

Assay: Measurement 1
Configuration
Documentation
GxP
Audit Trail
General
Doses
Data
Analysis
Inherit Properties
use analysis properties of the assay object
Open Assay Definitions
Model
4 parameter logistic curve (full curve fit)
Invert potency ratio.
Outlier Detection
No Outlier Test
Contamination-α
0,1
recursive testing
x ± n*σ-Test: n
2
Hypothesis Testing
ANOVA based on residual error (lack of fit + pure error)
Significance of the regression (%):
95,0
rejection criterion
Significance of deviations from linearity (%):
95,0
rejection criterion
Test for parallelism:
Hypothesis Test (F-Test) for significant deviations from parallelism
Significance of parallelism test (%):
95,0
rejection criterion
Equivalence testing interval (goalposts)
0,8
1,25
Confidence Interval for Potency Estimation
Fiducial limit of potency estimation* (%):
95,0
use Fieller's Theorem
EC50 Calculation (parallel-line model)
Method:
Do not calculate
Calculate 50% Response by:
This object
Note: You have only one replicate per treatment. The results of the statistical tests will be

Configuration Properties

The configuration properties define the settings for the configuration optimization.

Property	Description
Linear Range Configuration	
Method	Select the optimization method: • Full Range • Fixed Range • Automatic Detection (individual) • Automatic Detection (common range for the standard, individual for preparations) • Automatic Detection (common range for the standard, identical for preparations) • Automatic Detection (individual range for the standard, identical for preparations)
Fixed Range	
To / From	Step number of the selected range
Automatic Selection Options	
Allocation Strategy	The optimization fits the: • best range • maximum range • exact range
Minimal/Exact # of points	Allocated configurations have at least/exact this number of steps
Allocation Region	is either the full range or a defined subrange
select only configurations with identical number of treatments	Allows to force the optimizer to select only identical number of steps in both, standard and preparation.
Include the 50% response	You can force the optimizer to prefer or to mandatory include the 50% value.
Calculate 50% response by	The 50% response has to be discovered from the assay. To do so, you can use • the object itself • the standard • the control or • all objects of the assay.

Figure: Screen Layout of the Configuration Properties

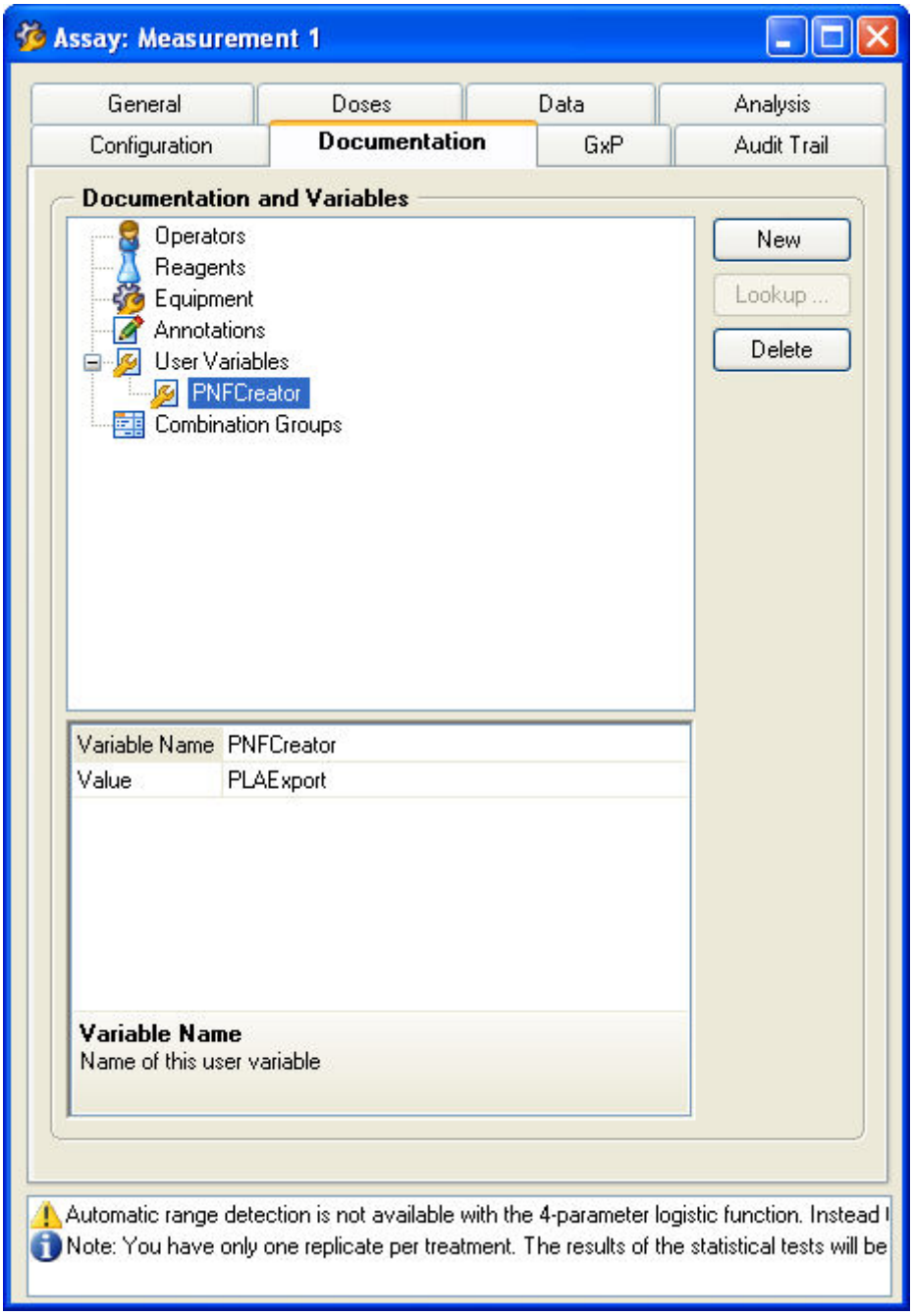

Assay: Measurement 1
General
Doses
Data
Analysis
Configuration
Documentation
GxP
Audit Trail
Inherit Properties
use range properties of the assay object
Open Assay Definitions
Linear Range Configuration
Automatic Detection (individual range)
Manual Selection Options:
Fixed Range:
1
6
Automatic Selection Options (used by automatic detection methods)
Allocation Strategy:
Best Range
Minimal # of points
3
Allocation region:
1
6
maximal allocation range.
select only configurations with identical number of treatments
Inclusion of 50% response:
ignore.
Calculate the 50% response by using the
this object.
Automatic range detection is not available with the 4-parameter logistic function. Instead
Note: You have only one replicate per treatment. The results of the statistical tests will be

Documentation Properties

The Documentation features allow to enter meta information for the assay. Each entry has several properties:

Property	Description
Documentation and Variables	
Operators	Define the operators of the assay and their roles. • Name • Role • Timestamp • Comments
Reagents	Define details of reagents used with this assay. • Identification • Lot or Batch No. • Concentration/Amount • Comments
Equipment	Equipment used for this assay • Identification • Machine/Lot No. • Comments
Annotations	Remarks of the operators • Username • Timestamp • Annotation
User Variables	Key/Value pairs available for reporting • Variable Name (Key) • Value
Combination Groups	Combination of assay results are calculated in groups • Combination Group

Figure: Screen Layout of the Documentation Features

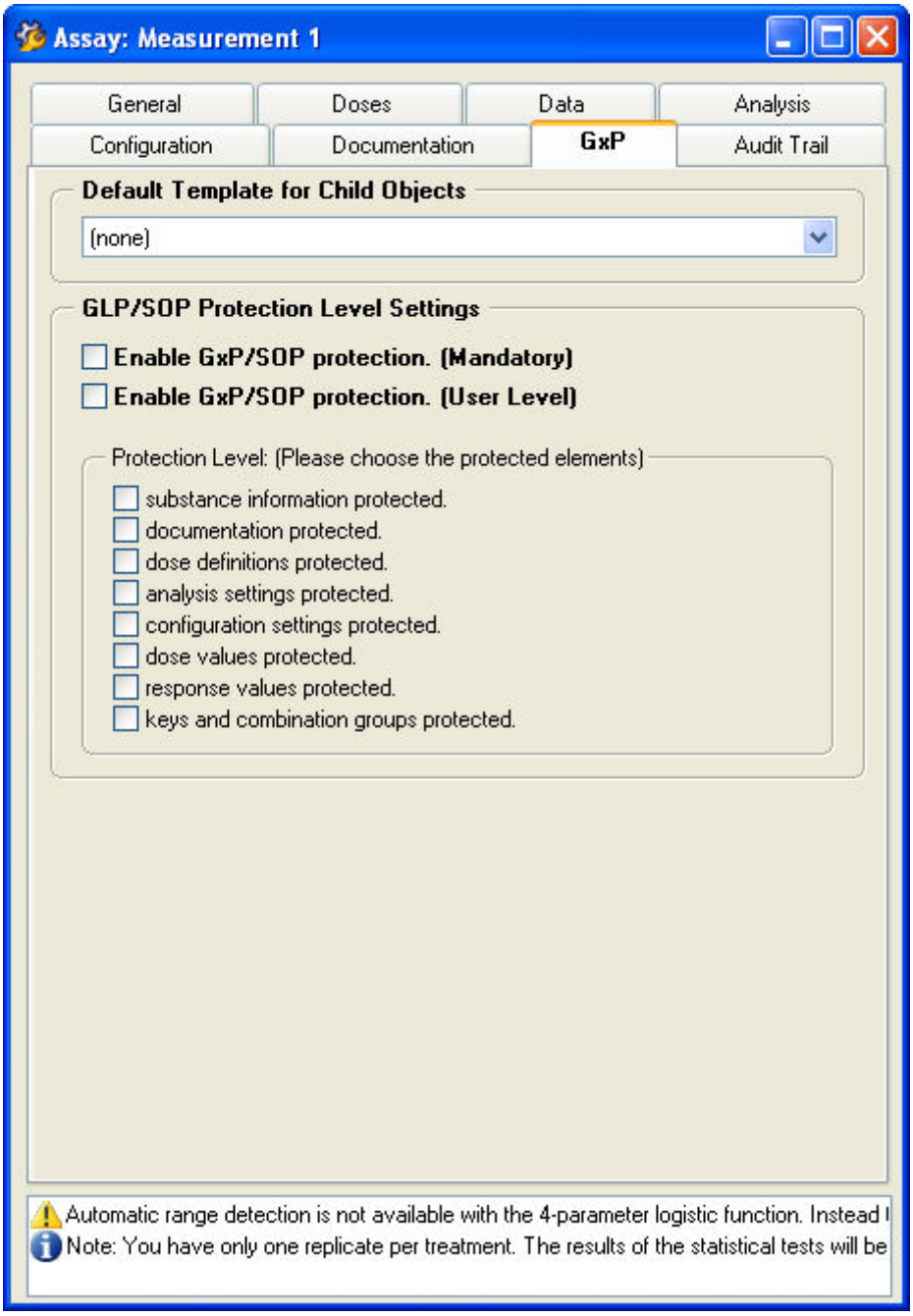

Assay: Measurement 1
General
Doses
Data
Analysis
Configuration
Documentation
GxP
Audit Trail
Documentation and Variables
Operators
Reagents
Equipment
Annotations
User Variables
PNFCreator
Combination Groups
New
Lookup ...
Delete
Variable Name
PNFCreator
Value
PLAExport
Variable Name
Name of this user variable
Automatic range detection is not available with the 4-parameter logistic function. Instead
Note: You have only one replicate per treatment. The results of the statistical tests will be

GxP Settings

The GxP settings allow the protection of properties.

Property	Description
Default Template for Child Objects	
Template	Select a template to be used as a template when childs are created.
GLP/SOP Protection Level Settings	
Enable GxP/SOP protection (Mandatory)	Available for administrators only. Activates the protection.
Enable GxP/SOP protection (User Level)	Available for every user, when the above property is inactive. Activates the protection.
Protection Level	
Substance Information	protects informations on the subject (but not the Batch Identification)
Documentation	protects the documentation properties
Dose Definitions	protects the dose properties
Analysis	protects the analysis properties
Configuration	protects the configuration properties
Dose Values	protects the dose values/dilution series
Response Values	protects the response values (useful only in combination with PLA Import Modules)
Keys and Combination Groups	protect user defined variables.

Figure: Screen Layout of the GxP Settings


Assay: Measurement 1
General
Doses
Data
Analysis
Configuration
Documentation
GxP
Audit Trail
Default Template for Child Objects
(none)
GLP/SOP Protection Level Settings
Enable GxP/SOP protection. (Mandatory)
Enable GxP/SOP protection. (User Level)
Protection Level: (Please choose the protected elements)
substance information protected.
documentation protected.
dose definitions protected.
analysis settings protected.
configuration settings protected.
dose values protected.
response values protected.
keys and combination groups protected.
Automatic range detection is not available with the 4-parameter logistic function. Instead
Note: You have only one replicate per treatment. The results of the statistical tests will be

Analyze Assays

Introduction to Assay Analysis with PLA

Assay analysis with PLA is easy. Once you have defined your assay, and keyed in the appropriate response values PLA is full suited with every tool you need for fast and efficient analysis.

One has to distinguish between the tools and the analytical options of PLA. The Assay Explorer of PLA is suited with all options for a deeper graphical analysis. The Assay Explorer gives you the option to check your assay. With a full range of graphical options you are able to detect problems with your assay. Using the ad-hoc template feature of the explorer you can test the analysis of your assay with different analytical options, without modifying the definitions of your assay.

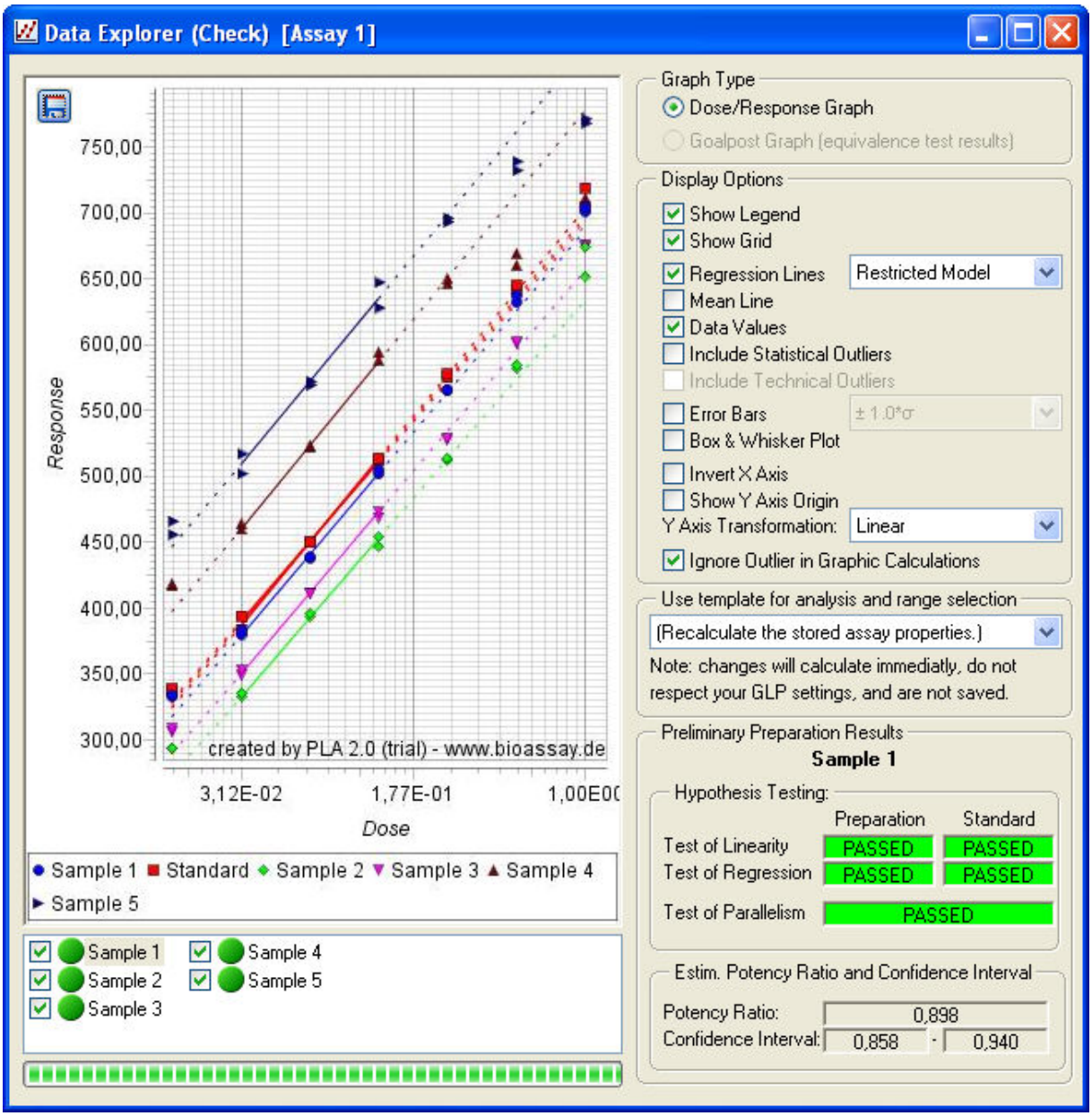
The Assay Explorer fulfills another important function for assay analysis: **a responsible analysis requires the graphical inspection of your assay**. Thoroughly check the response data of your assay for plausibility. No statistical test is able to detect plausibility problems.

Further reading:

- Explore your Assay
- Combination of Assay Results
- Calculate your Assay
- Report Analysis Results

Explore your Assay

The Assay Explorer has a wide range of options for graphical analysis:



On the right side there are several groups of options and informations.

Graph Type

The graph type distinguishes between the dose/response graph (shown above) and the goalpost graph that is available only when equivalence testing is chosen as the method of parallelism test.

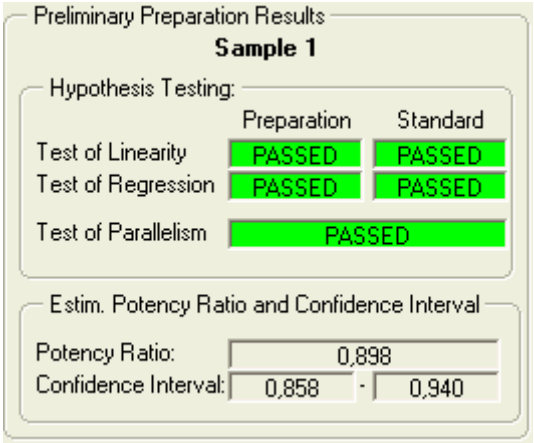
Display Options

The display options allow to modify the displayed graph:

show legend	toggle the display of the legend
show grid	toggle the display of the grid
regression lines	toggle the display of the regression lines
regression line type	switch between the restricted or the unrestricted regression lines. Use the unrestricted regression lines to get an impression of the quality of the fit
mean line	display a line through the means of the treatments
include statistical outliers	display the statistical outliers in the graph
include technical outliers	display technical outliers. This is available when statistical outliers are displayed too.
error bars	display the error bars of the treatments
box and whisker plot	display box and whisker graphic
standard deviation	multiplicity of the standard deviations for error bars and box and whisker plots
invert x axis	toggle the direction of the x axis (Note: PLA 1.2 has an inverted x axis)
show y axis origin	include the y axis origin in the graph
y axis transformation	change the y axis transformation. This option allows to inspect the influence of other response transformations on heteroscadescity. (Note: this does not change the response transformation).
include outliers in graphic transformations	check to neglect the outlier status for error bars, mean line and box and whisker plots.

Preliminary Calculation Results

Note: Final calculation results are found in the reports. These values do not reflect every aspect of analysis.

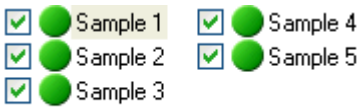


Note: Select a preparation in the selection section below the graphic to display specific results. Carefully check, that the preparation of interest is selected. Its name is displayed in this section.

The preliminary calculation results indicate the status of the hypothesis tests. The status of the regression test, the linearity test and the parallelism test is displayed in green or red fields as passed or failed.

The potency ratio (not potency factors) of the assay are displayed including the corresponding confidence intervals.

Selection Section



Below the graphic the selection section is displayed. By checking and un-checking preparations you can modify the display. The bullets indicate the test status of the preparation:

green - all hypothesis tests are passed
yellow - the linearity or regression tests failed and are not marked as rejection criterion
red - the parallelism test failed or a test failed, that is marked as a rejection criterion

Graphics

The graphics shows the dose/response graph or the equivalence test graph.

The disk symbol allows to save the graphic as a JPEG or PNG graphic for further use in publications etc. The dimensions of this graphic can be set in the options dialog.

Combination of Assay Results

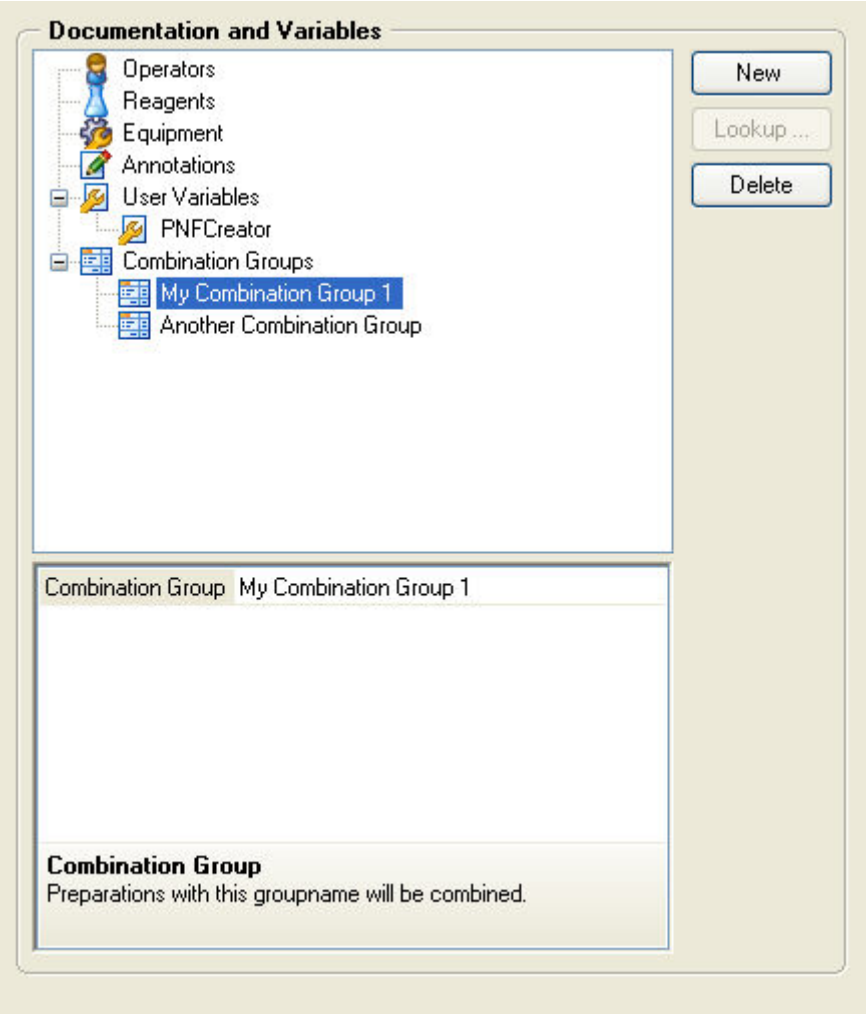
Combination of Assay Result calculations are available within PLA. To prepare these calculations, you have to add the preparations you want to combined to combination groups. A combination group is a simple named label, that allows PLA to analyze which preparations are combined. The labels can be edited on the documentation page of the Assay Editor or with the Combination of Assay Results Editor.

PLA will calculate the combination, when a group contains more than one preparation and the appropriate option on the Calculate dialog is checked.

PLA is able to combine results of any preparations within a project.

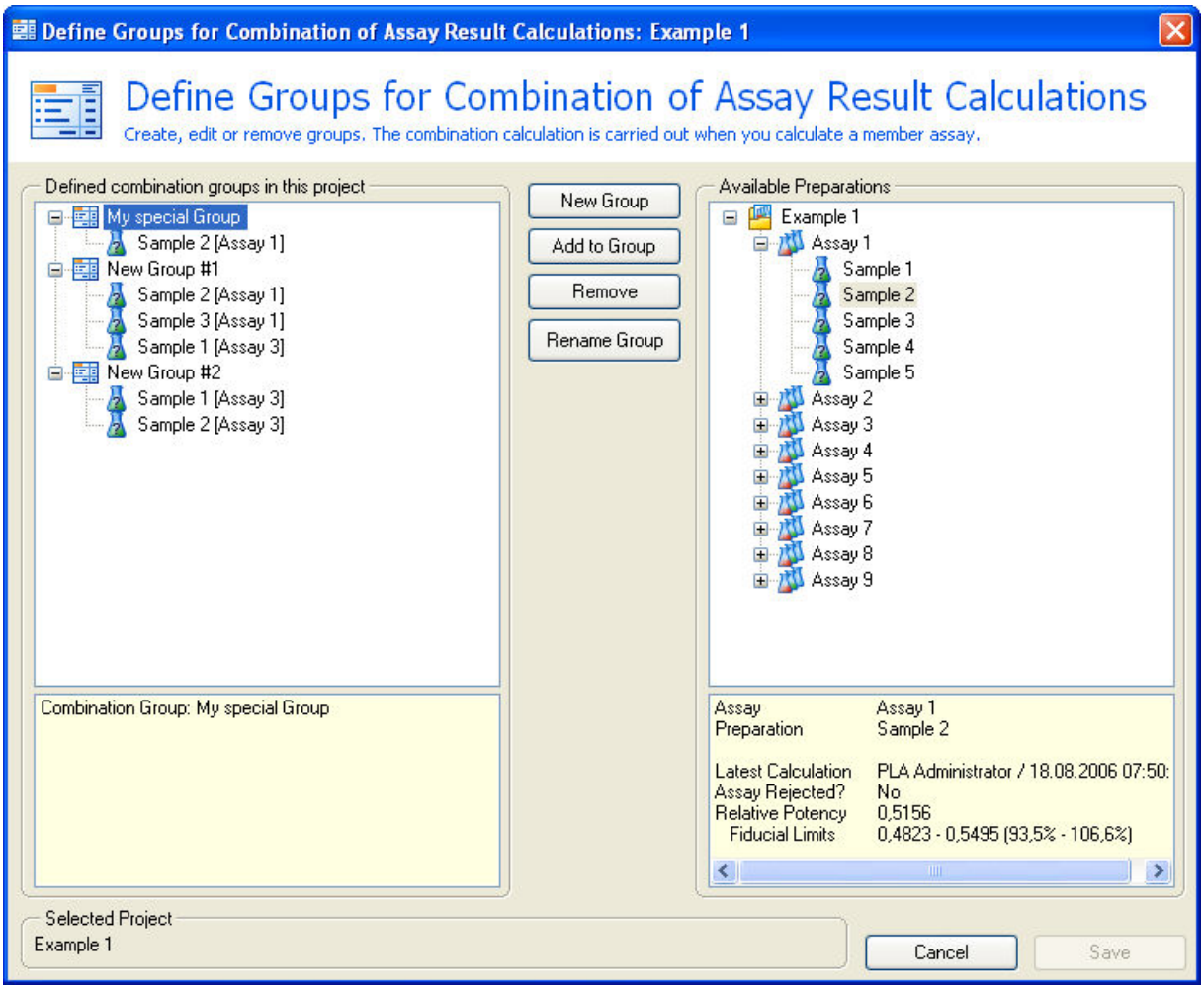
Definition of Combination Groups with the Assay Editor

Add the preparation to an assay by creating new combination groups. This methods is available for projects and assays to, allowing you to use inheritance.



Defining Combination Groups with the Combination Group Editor

The Combination Group Editor supports the efficient definition of the combination groups of a project.



The editor has two tree views:

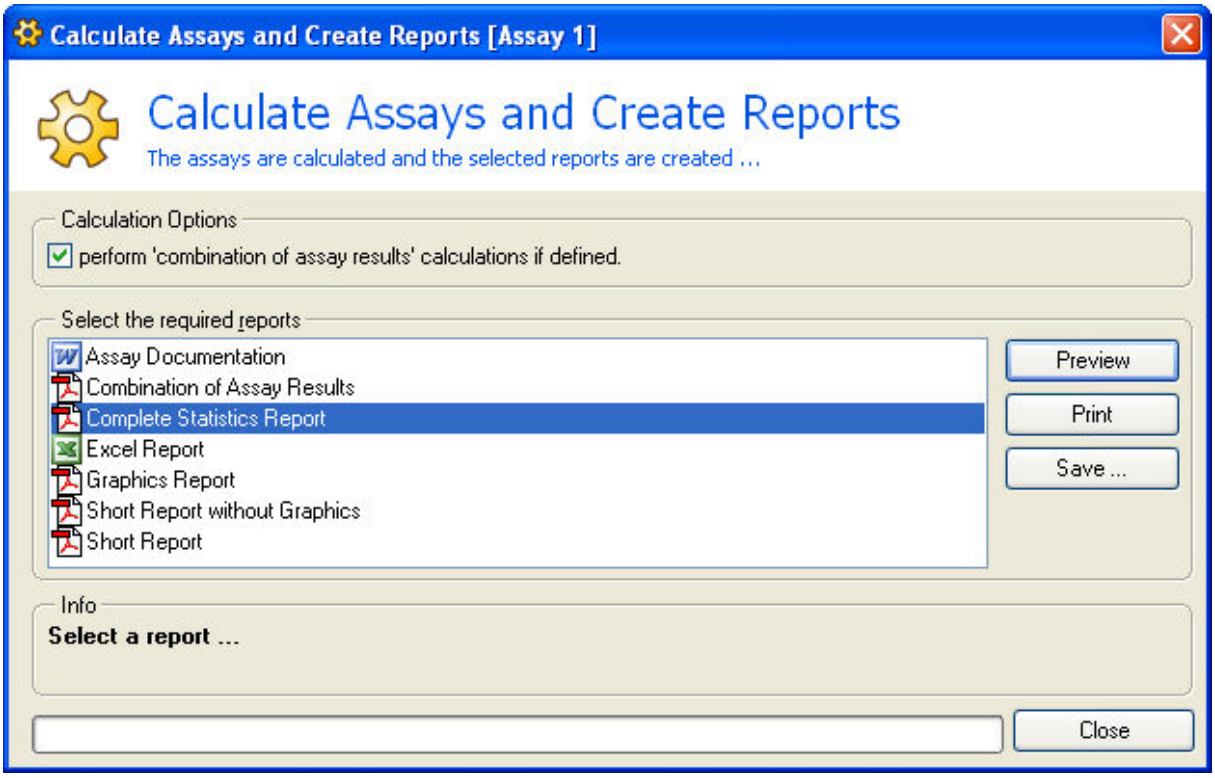
The left tree shows the defined combination groups within the selected project. You can create additional groups, rename groups and delete groups using the appropriate command buttons. Preparations can be removed. If you want to add a preparation, select the group which should get the preparation, than switch to the right tree view and use the "Add to Group" button.

Below the trees you can see a few details on the preparations. If the preparations have been calculated earlier, cached calculation results are shown below the tree views.

When finished press Save, to save the groups and close the dialog.

Calculate & Report

To obtain final calculation results select the assay or project in question and then select the Calculate method from the file menu, the navigator context menu or from the toolbar. The Calculate Assays and Create Reports:

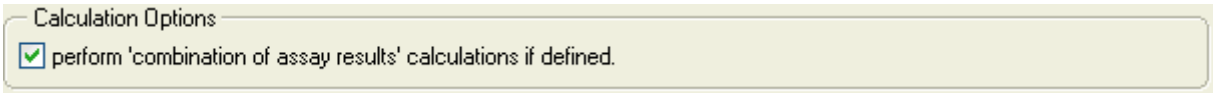


By double-clicking a report template or by selecting one of the following functions, the requested calculation is taken out and the report is created:

Preview opens the report by starting the appropriate application.
Print prints to the standard printer of the system. If you want to print to alternative printers, use Preview and the print function of the application.
Save opens a save-dialog of the operating system and save the report to the selected file.

Combination of Assay Results

If you want to calculation the defined combination of assay results, the option has to be activated:



PLA analyzes the defined combination of assay result groups and adds the required assays to the calculation. This will need additional computation time.

Default Reports

By default PLA is delivered with seven different report templates. Further report templates or individual report templates (including company information etc) can be ordered from Stegmann Systems.

The following reports are available:

Assay Documentation (requires Microsoft Word 2003 or higher)
This is a report for documentation of the assay. It contains properties and data. Calculation results are not included.

Combination of Assay Results (requires Adobe Acrobat Reader)
The report contains only the combination of assay results data.

Complete Statistics Report (requires Adobe Acrobat Reader)
This report should be considered as a default report. It documents the assay, includes all of the ANOVAs and regression results and the potency calculations. The report is augmented with three graphs per assay.

Excel Report (requires Microsoft Excel 2003 or higher)
The Excel Report contains the data and the potency results for further processing.

Graphics Report (requires Adobe Acrobat Reader)
This report contains large graphics of the regression results.

Short Report (requires Adobe Acrobat Reader)
Short Report without Graphics (requires Adobe Acrobat Reader)
The short report contains the data, the results of the hypothesis tests and the potency calculation on a single page per assay.

Technical Remarks on Preview and Print

1. Print and Preview make use of the corresponding application. E.g. if you create a Adobe PDF report, the Acrobat Reader or an alternative viewer for PDF file has to be available and the file type of PDF has to be registered in the operating system.

2. If you want to test the availability of the application, save the report to any location. Then start the Windows Explorer and try to open the file by double-clicking. If the report is displayed, PLA is able to display the report. If it is not displayed, PLA will not be able to open the report. The print method can be tested by selecting the Print command of the Windows Explorers Context menu of the file (open with a right click). Then select print. If the report is printed, PLA will be able to print to.

Advanced Topics

Electronic Signatures

PLA accepts electronic signatures for the objects of PLA. Every object can be signed electronically with one exception, assay object signatures are always recursive on the child objects of the assays. An object can have any number of signatures.

Sign An Object

To sign an object, simply open it on the general page, and click the Sign button. The following dialog appears:

Apply Electronic Signature to [Example 1]
Apply Electronic Signature
Apply a 21 CFR part 11 Electronic Signature to the selected object.
Select a pre-defined comment or edit a new one:
(Select a default reason or enter a new one)
Any comment regarding your signature
apply signature to child objects
Authorize your signature with your password:
Sign
Cancel
The application of an electronic signature secures the objects definitions and data. If you apply the signature to an assay standards, preparations, and controls are signed, too. If you sign a project, you may select wether to sign it's assays or not.

If you want to apply your signature to the child objects too (at the project level), check this

element. Type in your password and click Sign. Once you have clicked "Sign" the requested signatures are applied. The application of a signature is logged in the audit trail.

Note 1: A signature makes an object read only. No further changes can be applied to the object as long as the signature is in place.

Note 2: Default reasons can be defined in the system options dialog.

Remove A Signature

The PLA Administrator defines, wether a signature can be removed by everyone, by the signer himself or by administrators only. A signature removal is logged in the audit trail.

To remove a signature open the object go to the electronic signatures section and click Remove. The Remove Electronic Signature dialog appears.

Remove Electronic Signature From [Example 1]
Remove Electronic Signature
Remove a 21 CFR part 11 Electronic Signature from the selected object.
remove all signatures of this object
recursive remove of signatures from child objects
Authorize signature removal with your password:
Remove
Cancel

You may select to remove all signatures of the object and to recursively remove signatures from the child objects. To start the removal type in your password and press Remove.

Secure Transfer of Data and Objects

PLA enables you to securely transfer assay data and templates between different PLA installations. This feature is very useful for the communication between different sites or companies (E.g. to and from your CRO).

You can securely transfer:

- projects
- assays
- templates

First of all you can sign the objects using the Electronic Signature features of PLA. These signatures can be transferred to other installations of PLA. The object is not modified until the signature is in place.

Then export the object using the PLA Secure Format (PSF). The PLA Secure Format makes use of the internal Public/Private Key Infrastructure of PLA. Any modification of the exported file is detected and the import is prohibited when a modification is detected.

Audit Trail

The Audit Trail of PLA is always enabled and cannot be manipulated with the help of PLA. Every change of an object property or every other security relevant modification of the system is logged in the audit trail.

The audit trail information is split up into the main entry and details for the main entry.

Each main entry contains

- an unique entry number
- a time stamp
- an operator identification
- the type of the entry as listed below
- an object for the entry type

The following entry types are logged:

USER_LOGIN	An user logs into the system
USER_LOGOUT	An user logs out
USER_LOGINREJECTED	An user has not been allowed to log into the system
USER_PWCHANGE	An user changes his password
USRMGMT_ADDUSER	An Administrator adds a user to the system
USRMGMT_DELETEUSER	An administrator removes an user from the system
USRMGMT_MODIFYUSER	An administrator modifies user details
OBJECT_SAVED	An object has been saved.
OBJECT_SIGN	An object has been signed electronically
OBJECT_REMOVESIGNATURE	An object signature has been removed
OBJECT_INITIAL	A new object is created
OBJECT_COPY	An object is copied
OBJECT_MOVE	An object is moved
OBJECT_DELETE	An object is deleted
DB_ADMINACCESS_ON	Database administrative access is requested
DB_ADMINACCESS_OFF	Database administrative access is revoked
DB_COMPACT	Database has been compacted
DB_CHECK_START	A database check has been started
DB_CHECK_STOP	A database check stopped
DB_CHECK_CORRECTION	A database check corrected a problem
DB_ADD_SESSION	A session is added
DB_DELETE_SESSION	A session is removed
DB_KILL_LOCK	A lock has been killed
DB_MIGRATE	The database has been migrated to a new scheme
IQ_START	The IQ starts
IQ_RESULT	The IQ result is logged
IQ_FINISHED	The IQ stops
OQ_START	The OQ starts
OQ_RESULT	The OQ result is logged
OQ_FINISHED	The OQ stops
PQ_START	A PQ starts
PQ_RESULT	The PQ result
PQ_FINISHED	The OQ stops
OPTION_MODIFIED	PLA Options have been modified

Each entry can have additional detail information. Every relevant modification is fully visible in the audit trail.

The complete audit trail can be inspected from the System menu. The audit trail information of a single object can be inspected on the audit trail tabpage of the assay editor.

Figure - Audit Trail Inspection from the system menu

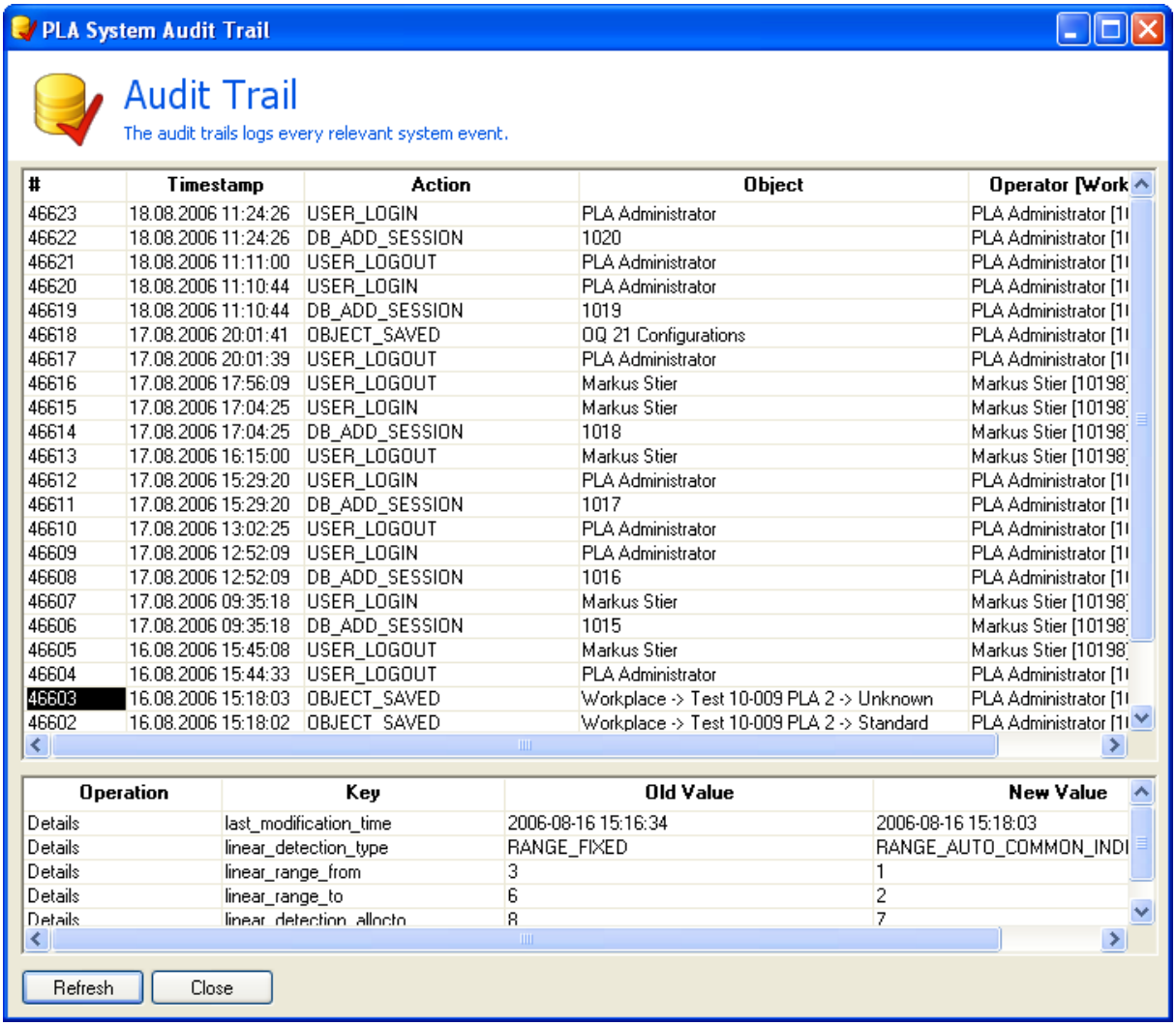
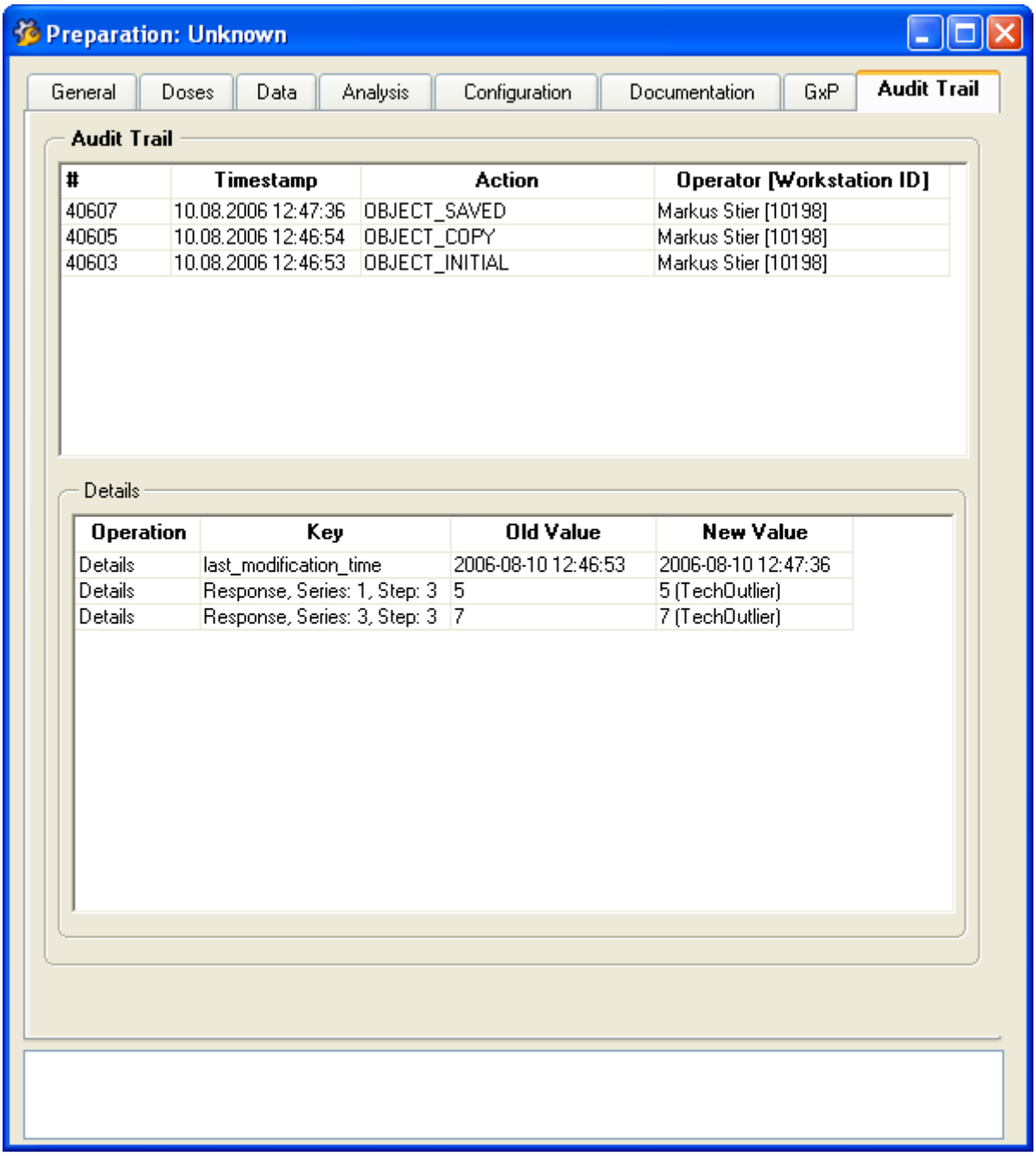

PLA System Audit Trail
Audit Trail
The audit trails logs every relevant system event.
| Timestamp | Action | Object | Operator [Work
46623 | 18.08.2006 11:24:26 | USER_LOGIN | PLA Administrator | PLA Administrator [1
46622 | 18.08.2006 11:24:26 | DB_ADD_SESSION | 1020 | PLA Administrator [1
46621 | 18.08.2006 11:11:00 | USER_LOGOUT | PLA Administrator | PLA Administrator [1
46620 | 18.08.2006 11:10:44 | USER_LOGIN | PLA Administrator | PLA Administrator [1
46619 | 18.08.2006 11:10:44 | DB_ADD_SESSION | 1019 | PLA Administrator [1
46618 | 17.08.2006 20:01:41 | OBJECT_SAVED | OQ 21 Configurations | PLA Administrator [1
46617 | 17.08.2006 20:01:39 | USER_LOGOUT | PLA Administrator | PLA Administrator [1
46616 | 17.08.2006 17:56:09 | USER_LOGOUT | Markus Stier | Markus Stier [10198
46615 | 17.08.2006 17:04:25 | USER_LOGIN | Markus Stier | Markus Stier [10198
46614 | 17.08.2006 17:04:25 | DB_ADD_SESSION | 1018 | Markus Stier [10198
46613 | 17.08.2006 16:15:00 | USER_LOGOUT | Markus Stier | Markus Stier [10198
46612 | 17.08.2006 15:29:20 | USER_LOGIN | PLA Administrator | PLA Administrator [1
46611 | 17.08.2006 15:29:20 | DB_ADD_SESSION | 1017 | PLA Administrator [1
46610 | 17.08.2006 13:02:25 | USER_LOGOUT | PLA Administrator | PLA Administrator [1
46609 | 17.08.2006 12:52:09 | USER_LOGIN | PLA Administrator | PLA Administrator [1
46608 | 17.08.2006 12:52:09 | DB_ADD_SESSION | 1016 | PLA Administrator [1
46607 | 17.08.2006 09:35:18 | USER_LOGIN | Markus Stier | Markus Stier [10198
46606 | 17.08.2006 09:35:18 | DB_ADD_SESSION | 1015 | Markus Stier [10198
46605 | 16.08.2006 15:45:08 | USER_LOGOUT | Markus Stier | Markus Stier [10198
46604 | 16.08.2006 15:44:33 | USER_LOGOUT | PLA Administrator | PLA Administrator [1
46603 | 16.08.2006 15:18:03 | OBJECT_SAVED | Workplace -> Test 10-009 PLA 2 -> Unknown | PLA Administrator [1
46602 | 16.08.2006 15:18:02 | OBJECT_SAVED | Workplace -> Test 10-009 PLA 2 -> Standard | PLA Administrator [1
Operation | Key | Old Value | New Value
Details | last_modification_time | 2006-08-16 15:16:34 | 2006-08-16 15:18:03
Details | linear_detection_type | RANGE_FIXED | RANGE_AUTO_COMMON_INDI
Details | linear_range_from | 3 | 1
Details | linear_range_to | 6 | 2
Details | linear_detection_allocto | 8 | 7
Refresh
Close

Figure - Audit Trail Page of the Assay Editor


Preparation: Unknown
General
Doses
Data
Analysis
Configuration
Documentation
GxP
Audit Trail
Audit Trail
| Timestamp | Action | Operator [Workstation ID]
40607 | 10.08.2006 12:47:36 | OBJECT_SAVED | Markus Stier [10198]
40605 | 10.08.2006 12:46:54 | OBJECT_COPY | Markus Stier [10198]
40603 | 10.08.2006 12:46:53 | OBJECT_INITIAL | Markus Stier [10198]
Details
Operation | Key | Old Value | New Value
Details | last_modification_time | 2006-08-10 12:46:53 | 2006-08-10 12:47:36
Details | Response, Series: 1, Step: 3 | 5 | 5 (TechOutlier)
Details | Response, Series: 3, Step: 3 | 7 | 7 (TechOutlier)

My First Assay with PLA

My First Assay with PLA

Note: This initial tutorial is available as a tutorial video in the online help, too.

This tutorial shows every step from the raw data to a complete assay definition in PLA.
There are three main parts:

1. **Definition of the Assay and Data Input**
   How to structure and define the assay in the PLA database.

2. **Exploring your Assay, Modify the Analysis options**
   Take a tour through the basic graphical analysis of the assay.

3. **Final Computation and Reporting**
   Finalise the computation and create reports for the assay.

The Exemplary Data

Our assay consists of a standard and a preparation, whose potency is to be calculated. As we will see the data has a highly sigmoid structure. The assay is a dilution assay with a 1 in 2 dilution series. Both, standard and preparation have twelve treatments, that are measured as triplicates.

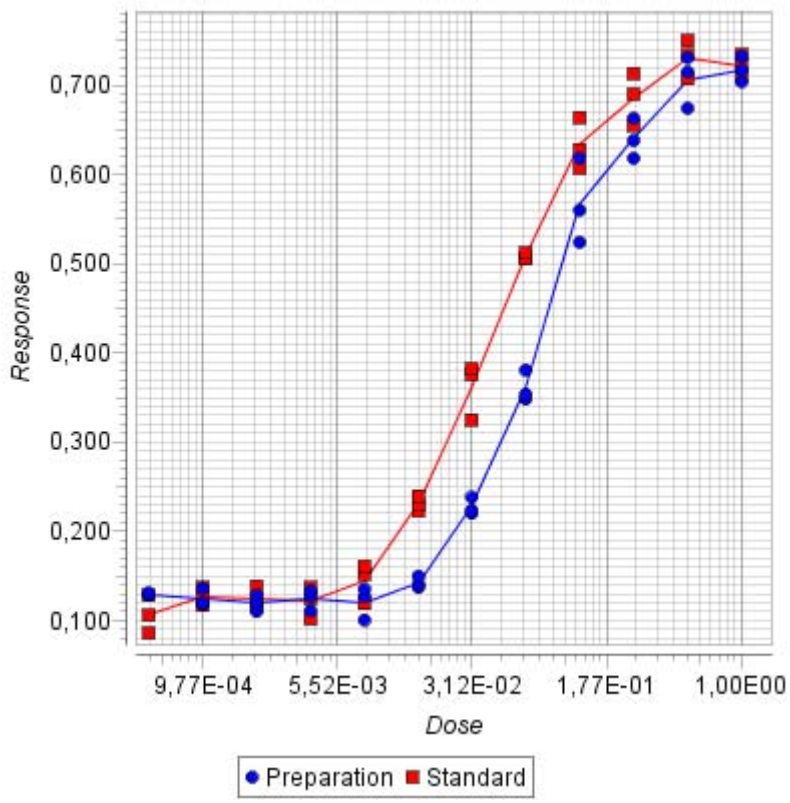
The standard has the following response values:

Dose / Response	Replicate 1	Replicate 2	Replicate 3
1:1	0.722	0.71	0.734
1:2	0.707	0.75	0.734
1:4	0.655	0.69	0.713
1:8	0.607	0.664	0.628
1:16	0.512	0.506	0.507
1:32	0.325	0.382	0.376
1:64	0.231	0.223	0.24
1:128	0.119	0.152	0.161
1:256	0.102	0.137	0.125
1:512	0.115	0.139	0.123
1:1024	0.117	0.137	0.124
1:2048	0.086	0.128	0.106

The data of the preparation is as follows:

Dose / Response	Replicate 1	Replicate 2	Replicate 3
1:1	0.732	0.717	0.704
1:2	0.731	0.674	0.715
1:4	0.618	0.663	0.638
1:8	0.618	0.524	0.56
1:16	0.348	0.354	0.381
1:32	0.224	0.22	0.238
1:64	0.141	0.15	0.137
1:128	0.101	0.135	0.127
1:256	0.111	0.133	0.127
1:512	0.119	0.128	0.11
1:1024	0.118	0.12	0.136
1:2048	0.131	0.128	0.129

This is a graphics of our exemplary data:



The assay has a strong lower asymptote, a highly significant area and it seems to close in an upper asymptote. This is not to easy to be analyzed.

We would prefer to analyze the data as a parallel-line assay, but we will have a look at the 5-parameter logistics too.

Hierarchy of Objects

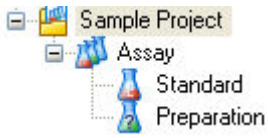
For this assay to be analyzed with PLA we need the following structure of objects:

A parent project, which serves as a container for any number of assays. [Sample Project]
    An assay object, representing the full assay [Assay]
        A standard for the settings of the standard [Standard]
        A preparation for the data, whose potency is of interest [Preparation]

In the user manual it is stated that the inheritance is a major tool in PLA to setup assays as easy as possible. In this tutorial we will make use of this starting at the assay level. If we had to analyze many assays of this type, we could use the properties of the project to have defaults for all objects.

To reach best efficiency we will create the project, without defining anything. Then we will add an assay and define our initial properties. The last step is the creation of the standard and the preparation. We will then add data to both of them.

In the navigator the sample will look like this:

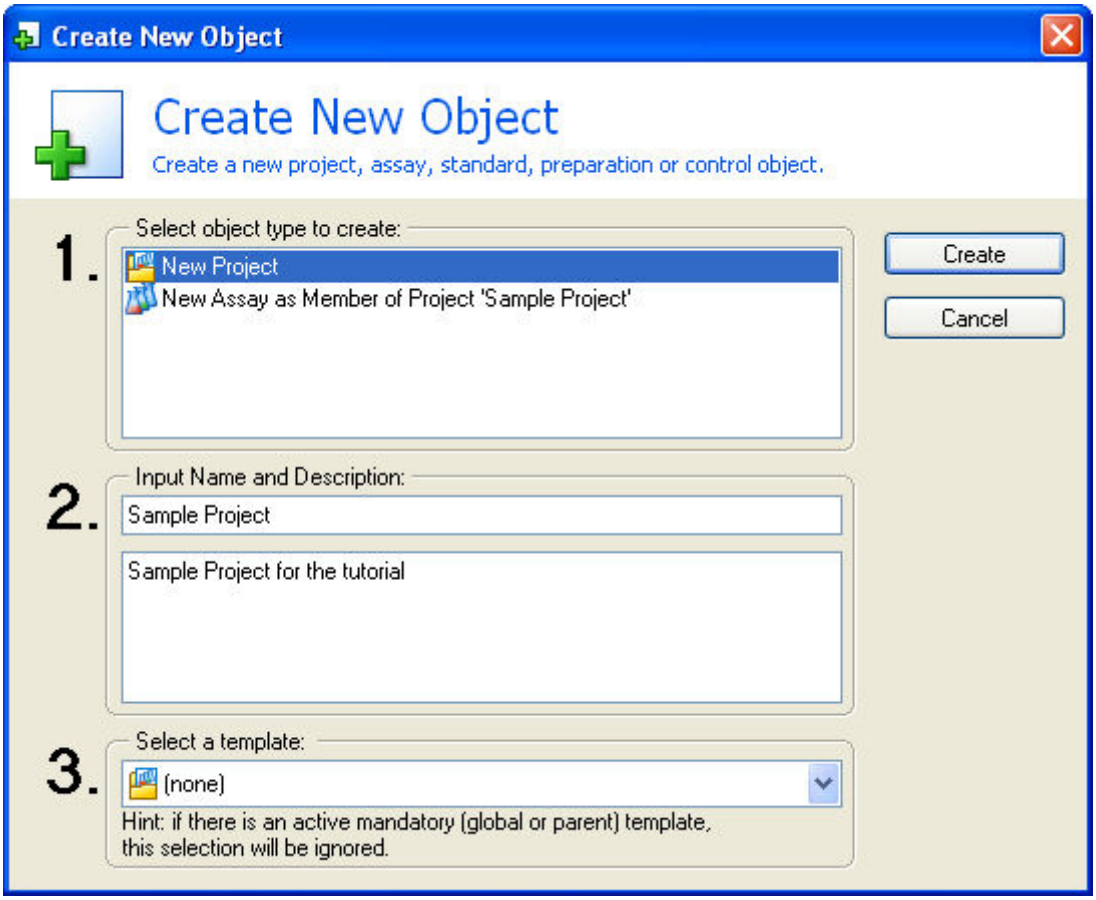


Data Input

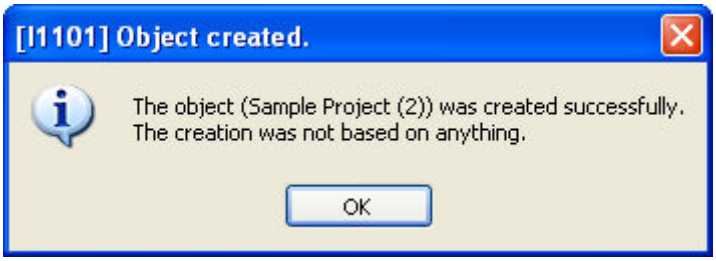
Follow these steps to create the sample assay.

Create the Project

Select "Create Object..." from the File menu. The Create Object Dialog appears:



Now Select "New Project" as the object type. Then type in "Sample Project" as the name and "Sample Project for the Tutorial" as description. Press Create to create the object. The next message acknowledges the object creation.



After pressing ok, the Editor for the project appears. Close it by clicking on cross at the right edge of sub-window.

Create The Assay

Now create the assay by selecting the parent project in the navigator (with a single left-click). Then select "Create Object..." from the file menu, the context menu or the toolbar. Select "New Assay as Member of Project 'Sample Project'" as the object type.

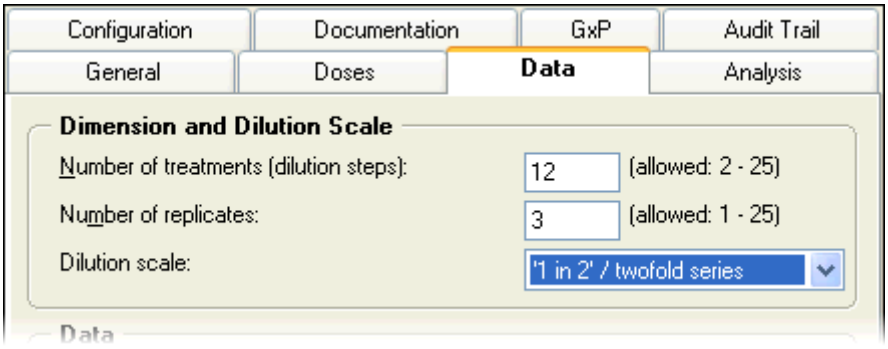
Once the object is created, we will set the initial parameters of the objects.

Three groups of information have to be set:

1. The Assay Dimension
2. The Configuration Optimzation Option
3. The Analysis Options

Assay Dimension

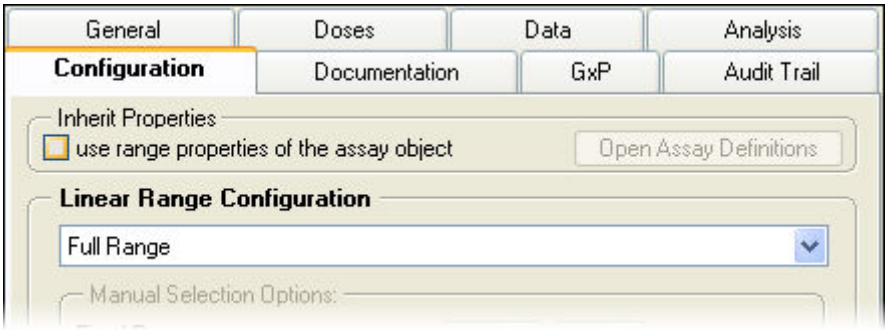
The standard and the preparation both have twelve treatments (dilution steps) and three replicates. Now open the assay (if not already open) and move to the data page.



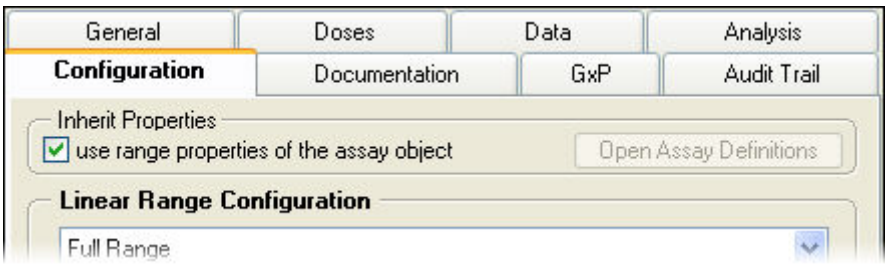
Set the number of treatments and the number of replicates.

Configuration Optimization

We will start with the Full Range option set. This leads to the inclusion of all data points in the computation. Select the Configuration page and set the optimization method to "Full Range".



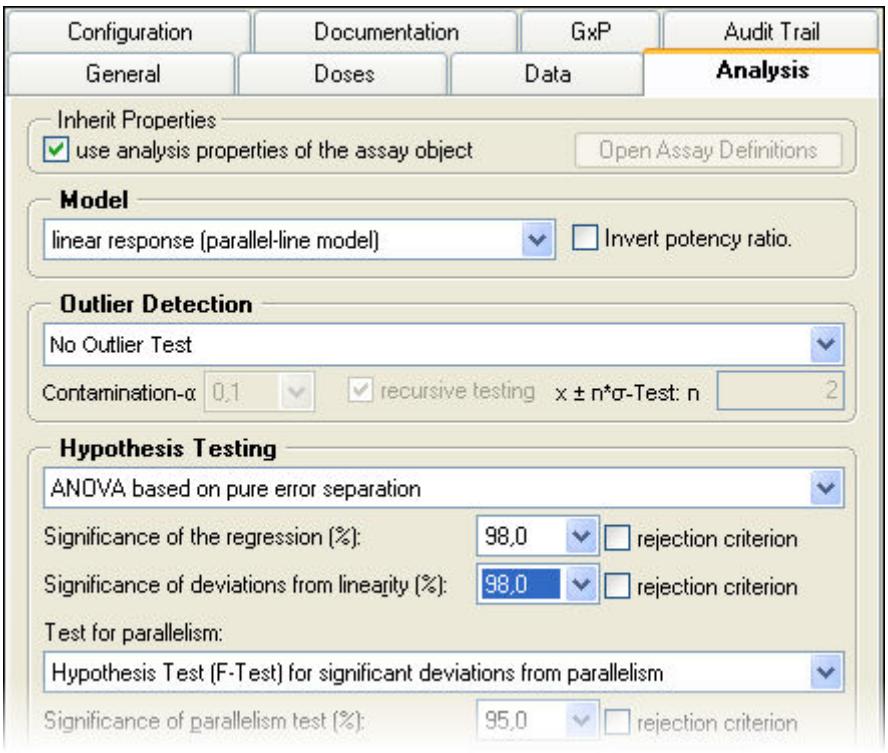
For easier maintenance in the case we want to switch this method, we decide to switch on the Inheritance Property:



Analysis Options

We now have to select the analysis options. We want to start with the parallel-line method. We select the analysis of the editor and select the following:

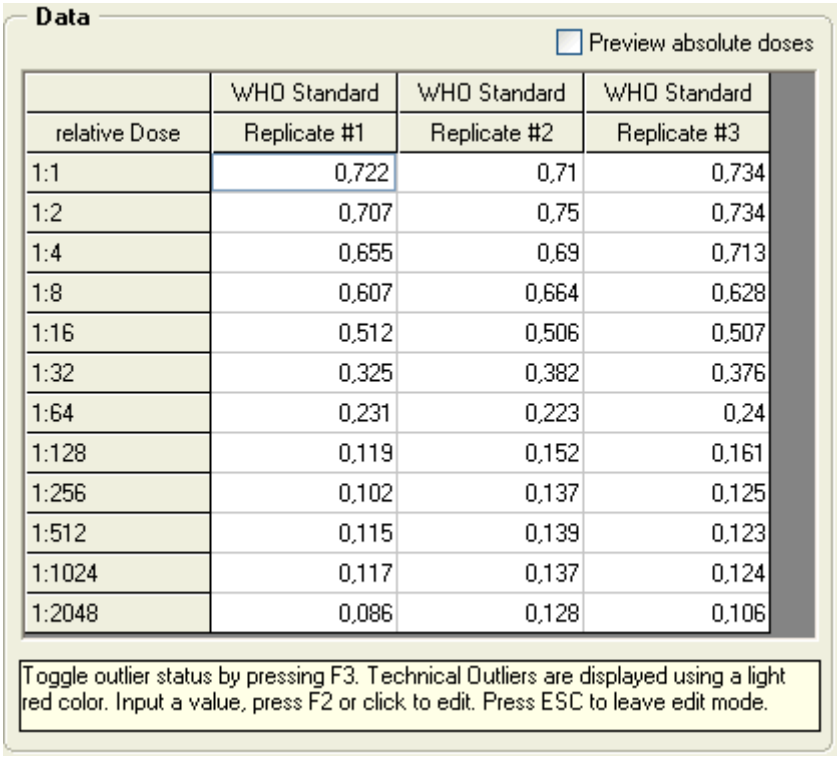
Model: parallel-line method
Significance of Regression and Linearity: 98%
Inherit the Analysis Properties: Yes



Once we have set these options, save the object (from the file menu or the toolbar) and close it.

Create The Standard Object

Now select the assay "Assay" in the navigator and create a "New Standard as member of assay 'Assay'". This new object already has inherited all properties from the assay object. Switch to the data page and type in the response data for the standard:



Data

Preview absolute doses

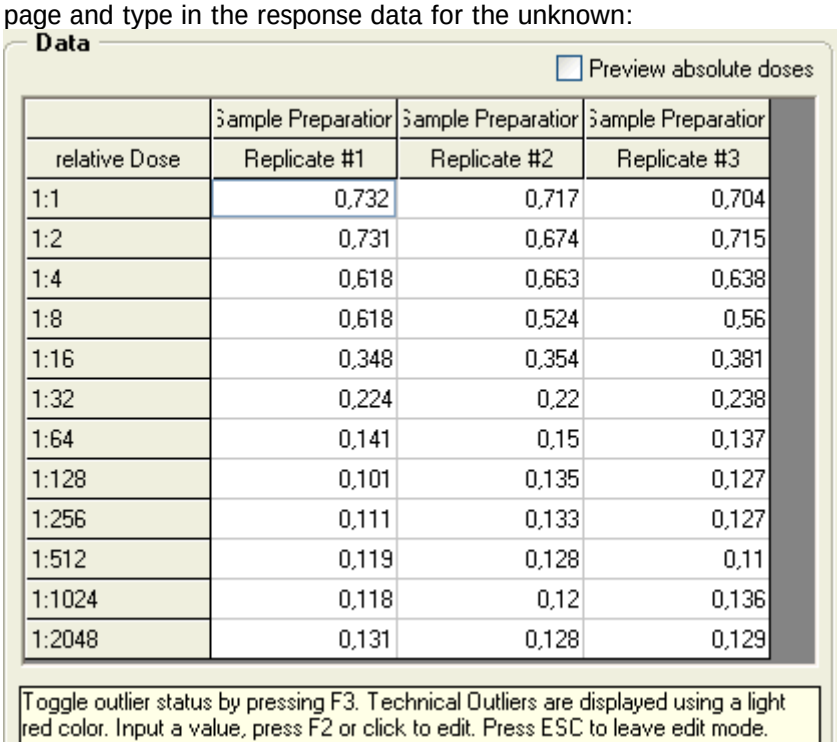
	WHO Standard	WHO Standard	WHO Standard
relative Dose	Replicate #1	Replicate #2	Replicate #3
1:1	0,722	0,71	0,734
1:2	0,707	0,75	0,734
1:4	0,655	0,69	0,713
1:8	0,607	0,664	0,628
1:16	0,512	0,506	0,507
1:32	0,325	0,382	0,376
1:64	0,231	0,223	0,24
1:128	0,119	0,152	0,161
1:256	0,102	0,137	0,125
1:512	0,115	0,139	0,123
1:1024	0,117	0,137	0,124
1:2048	0,086	0,128	0,106

Toggle outlier status by pressing F3. Technical Outliers are displayed using a light red color. Input a value, press F2 or click to edit. Press ESC to leave edit mode.

After you have finished save the standard and close it.

Create The Preparation Object

Now select the assay "Assay" in the navigator and create a "New Preparation as member of assay 'Assay'". This new object already has inherited all properties from the assay object. Switch to the data page and type in the response data for the unknown:



Data

Preview absolute doses

	Sample Preparation	Sample Preparation	Sample Preparation
relative Dose	Replicate #1	Replicate #2	Replicate #3
1:1	0,732	0,717	0,704
1:2	0,731	0,674	0,715
1:4	0,618	0,663	0,638
1:8	0,618	0,524	0,56
1:16	0,348	0,354	0,381
1:32	0,224	0,22	0,238
1:64	0,141	0,15	0,137
1:128	0,101	0,135	0,127
1:256	0,111	0,133	0,127
1:512	0,119	0,128	0,11
1:1024	0,118	0,12	0,136
1:2048	0,131	0,128	0,129

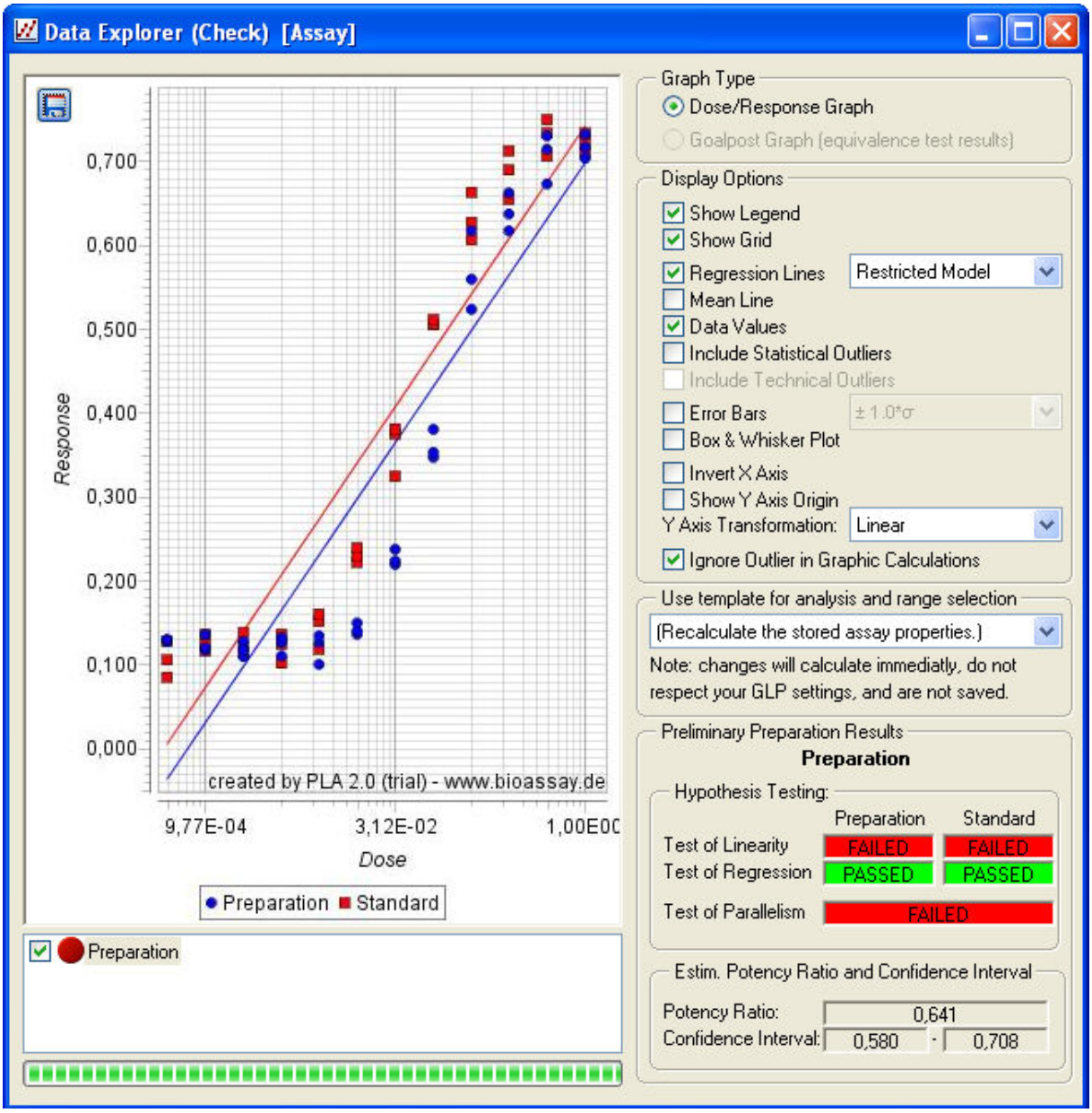
Toggle outlier status by pressing F3. Technical Outliers are displayed using a light red color. Input a value, press F2 or click to edit. Press ESC to leave edit mode.

After you have finished the input, save the object. Do not close it.

A First Look

Once we have finished data input, we should visually inspect the object. If it is not already open, open the preparation. (Note you can start the visual inspection from any object of the assay. Only the first display is influenced by the selected object. If you start from the assay, all preparations are included. If you start from a specific preparation, only this is displayed by default.)

Now select the Check button from the toolbar or start Check from the file menu. The Assay Explorer is displayed and preliminary result is calculated. (Never communicate this result, always run a final calculation).



As expected the hypothesis regarding the validity of assay fail. We have selected Full Range for the configuration, which is a bad choice for this assay.

With the Assay Explorer you cannot manipulate data. So take the chance and try all options of the dialog!

We should now try to optimize our configuration, to achieve a valid parallel-line assay.

Optimizing the Configuration

In a sigmoid example it is necessary to thoroughly select the valid dose-response regions for the assay. You can do this by selecting a fixed range on the configuration page of each object. But you can also let PLA do the work for you.

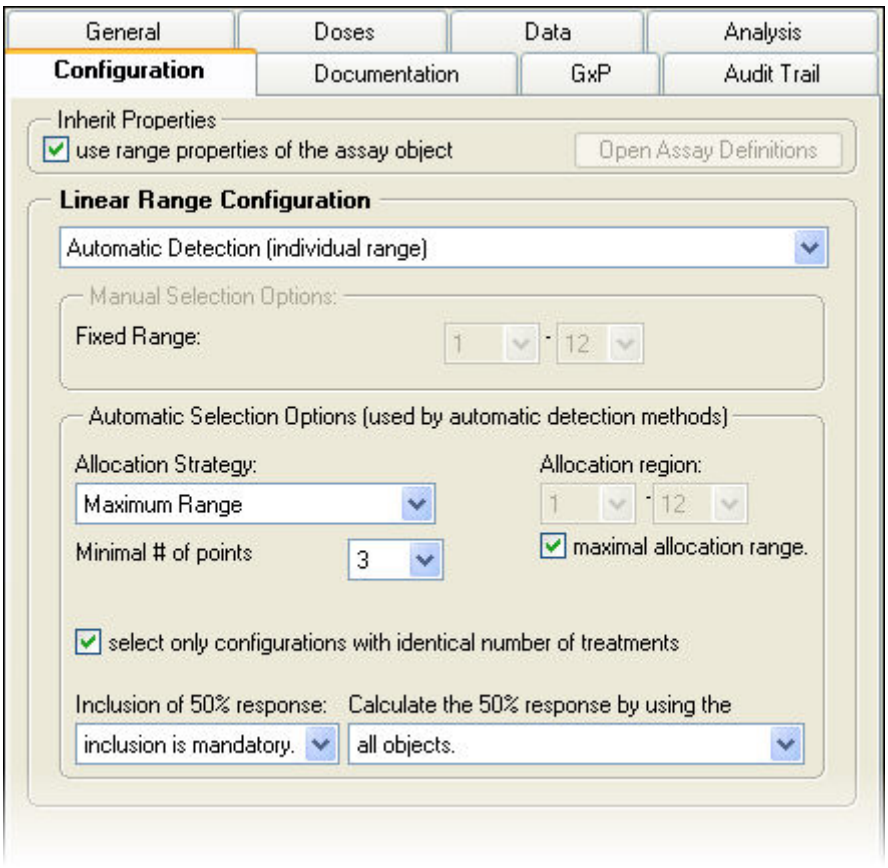
If you decide to try the automatic optimization you should nevertheless thoroughly check results.

We will try the following:

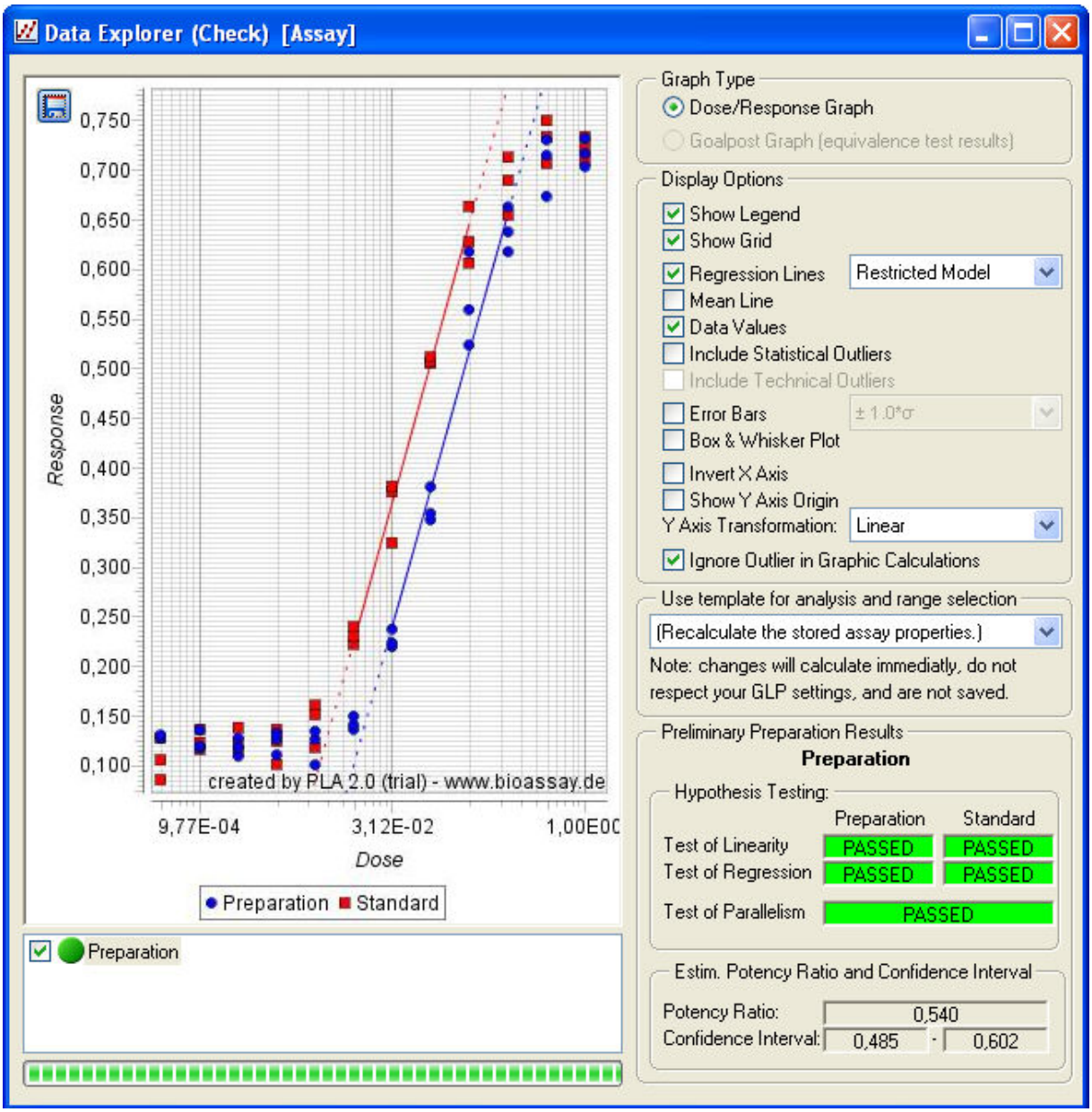
PLA should search for a maximal region in the assay, that fulfills the hypothesis criteria. The 50% response of the assay should be included. The optimized solution should have identical number of points (treatments) for both, Standard and Preparation.

So we go to the Configuration page of the assay (since we activated the inheritance option. If we didn't, the next steps have to executed on the standard and the preparation).

Now we select the options as follows:



Once we have saved the assay, we select "Check" from the toolbar again. The assay explorer re-appears with the following screen:



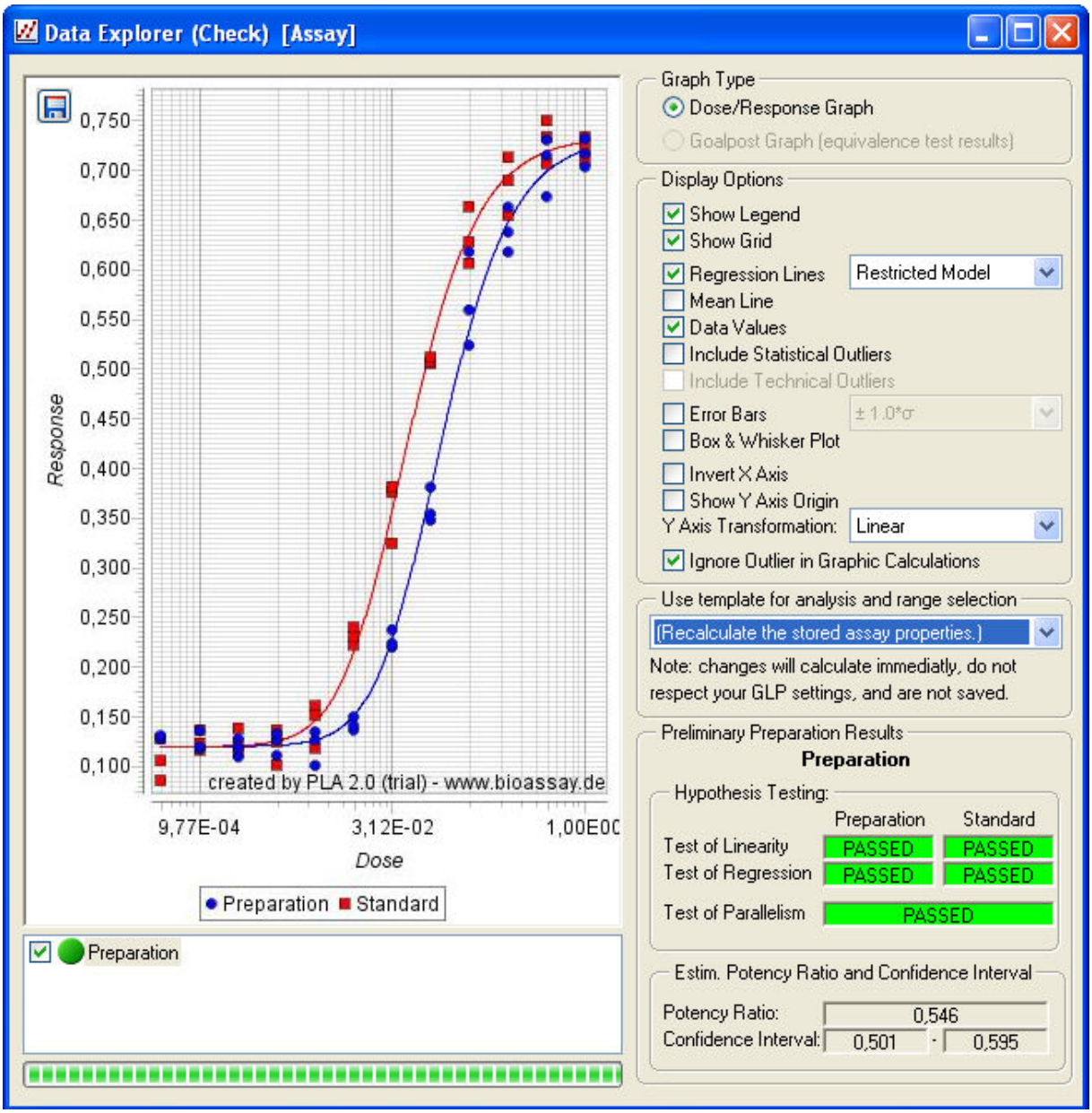
The assay now passes all hypothesis tests and the visual inspection displays a solution in accordance to our expectations. The Potency ratio is calculated as 0.54 with a confidence interval of 0.485 to 0.602

Now lets switch to full curve fitting with the 5-parameter method and lets have how this solution is calculated.

Switching the Regression Model to 5 Parameter Logistics

The 5-parameter logistics functions is used very often nowadays, since it allows to take the full curve into account and due to fifth parameter it is able to fit asymmetric dose response relationships.

Since we have activated the inheritance property on the analysis page, we open the assay and go to analysis page. Select 5-parameter logistic curve fit as the model. Then save the assay. Start the Assay Explorer with Check from the toolbar.



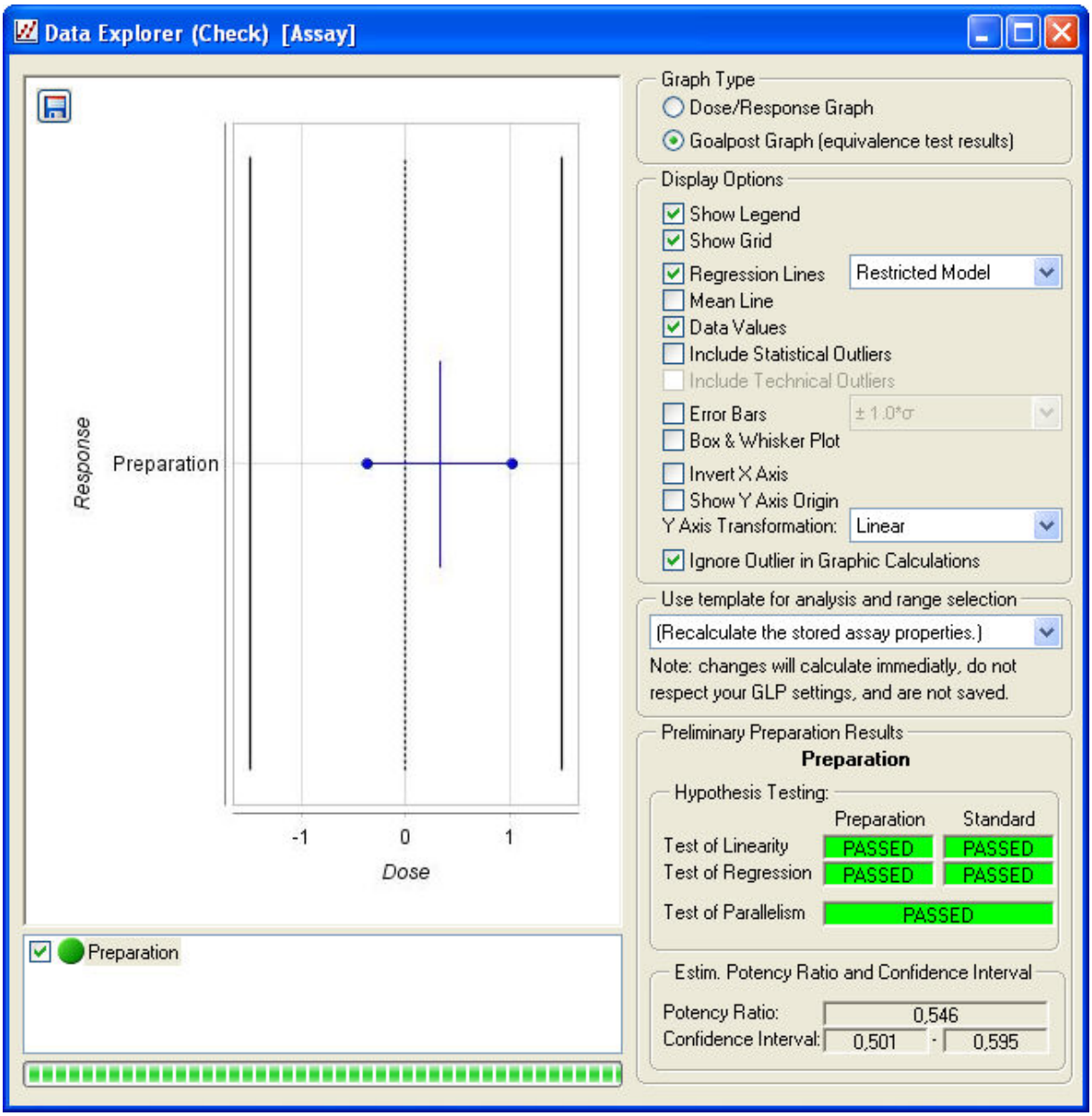
We can see the 5-parameter fit for the full with a potency of 0.546. The confidence interval is calculated as 0.501 to 0.595 which is a little sharper than the confidence limit of the parallel-line assay.

Last but not least, we want to take a look at the equivalence test for parallelism.

What About Equivalence Testing

Equivalence Testing has been discussed within the last two or three years. This approach allows to define an alternative parallelism test. This is of interest especially for very exact assays, where the parallelism based on the F-Test fails very often.

Open the analysis page of the editor and select the "Equivalence Test based on Difference of Slopes" as the parallelism test method. Now set the goalpost to -1.5 to 1.5. Save the assay and restart the Assay Explorer. Switch to the Goalpost Graph.



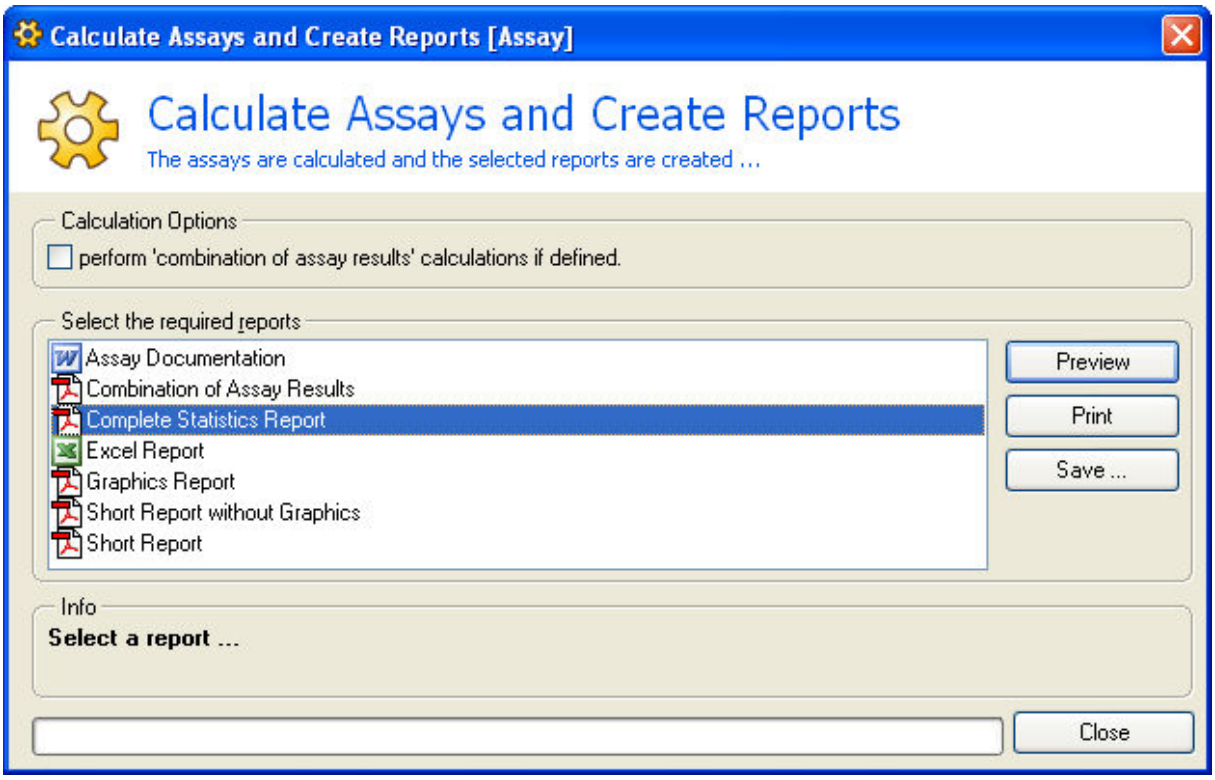
You can see the confidence interval falls entirely between the goalposts. Therefor, the parallelism test is passed. Close the Assay Explorer.

After we have finalized our initial analysis, we now start the final computation.

Final Computation and Reporting

For the final computation we select the assay or any child of the assay in the navigator. Then we start "Calculate & Report" from the file menu, the navigators context menu or from the toolbar.

The Calculation dialog appears:



Select a Report and press Preview, Print or Save. The final calculation is started and the report is generated. After the generation process finished, the desired action takes place and you receive your report of interest.

Validation Guide

Welcome to the PLA 2.0 Validation Package

To achieve GxP compliance your installation of PLA has to be validated. This validation is a very time-consuming step if you do not have automated methods available.

With the help of the PLA Validation Package you are able to reduce this effort to an absolute minimum.

The PLA Validation Package is a separately sold solution that contains all information typically needed for a successful validation of PLA 2.0. The license dialog

What is included in the package?

- Installation Qualification (IQ) Documentation
- Automated Installation Qualification IQ

- Operational Qualification (OQ) Documentation
- Automated Operational Qualification OQ

- Performance Qualification PQ Guidelines
- Automated Creation of PQ Datasets and Documentation
- Automated Performance Qualification PQ Processing

Principles of Validation

There are some basic principles which have to be taken into consideration when validating a software.

Validation of Each System

A software vendor is in principle not able to deliver a validation statement with the software. Not only the software can have errors that are critical to the results, but also each single computer system has to be considered as a potentially defective system. There are many sources of errors within the computer system. The random access memory, CPU, hard disk, the operating system are able to cause different errors that are quality critical. E.g. in the past even the CPU could cause mathematical errors. Defective non-error correcting RAM is able to vary calculation results. Defective hard drives can modify quality critical components of a software system.

This all leads to the conclusion that every single computer has to be validated. It is not enough to validate an exemplary system.

PLA 2.0 is fitted to allow a very fast validation of your system. The different components of the Validation Infrastructure of PLA are optimized to efficiently deliver the required tasks to you.

Cryptographically Secured Reference Data

PLA 2.0 is delivered with cryptographically secured reference data sets for the Installation Qualification (IQ) and the Operational Qualification (OQ). The use of cryptographically secured digital signatures assures the integrity of the reference data. PLA makes use of a public key cryptographic system. Only Stegmann Systems is able to publish these reference data sets.

For the integrity of the Performance Qualification data PLA makes use of a special pair of cryptographic keys only used for PQ data. This opens a security shell for this type of data. Only PLA itself is able to create PQ data sets. There is no way to compromise these data sets.

Recommendation for your IQ/OQ Procedures

Depending on the status of your internal IQ/OQ procedures we would like to suggest to base your IQ/OQ procedures for PLA on the automated procedures of PLA and the certificates they provide. This can drastically reduce the effort to qualify new releases of PLA. Stegmann Systems will verify its IQ and OQ data sets with every (sub-) release of PLA. Due to the cryptographically secured files, PLA is able to provide you with required certificates. Stegmann Systems guarantees the availability of this approach for the complete PLA 2.x product line. Even Import Modules and Report Templates are delivered with the required IQ reference data, so their correct installation we be confirmed with the certificates too.

Installation Qualification

The Installation Qualification Process

Goals of the Installation Qualification

During the installation of a software product like PLA software components are installed at several locations of the computer system. The components installed divide into the following groups:

- The Main Program and its files. These are typically installed in the Program Files directory of windows. Files in this directory should not be modified during normal operation of the system.
- Shared components of the vendor. These are installed in Common Files sections. They are used by different programs of the vendor.
- System components are installed in the windows directory. They add new functions to the operating system or install new components or drivers.

A basic requirement of the Installation Qualification is a computer system with a operating system installation without errors. The installation qualification process than assures that all installed files of the software system are installed in the correct directories. It is proven that they are identical to the vendor distributed files by the calculation of a checksum. This checksum is cryptographically secured.

The basic goal of the installation qualification is to prove the correct distribution of the right files on the computer system.

Result of the Installation Qualification

As a result of the installation qualification you receive a certificate that contains information on all files of the PLA system. Their location and the details of the inspection. The certificate will only be printed when the check is successful. If the check found errors no certificate but an error report is printed.

The Installation Qualification certificate contains detailed information on

- the date the IQ was performed
- the user who performed the test
- the workstation id
- the detailed build number and serial number of PLA.

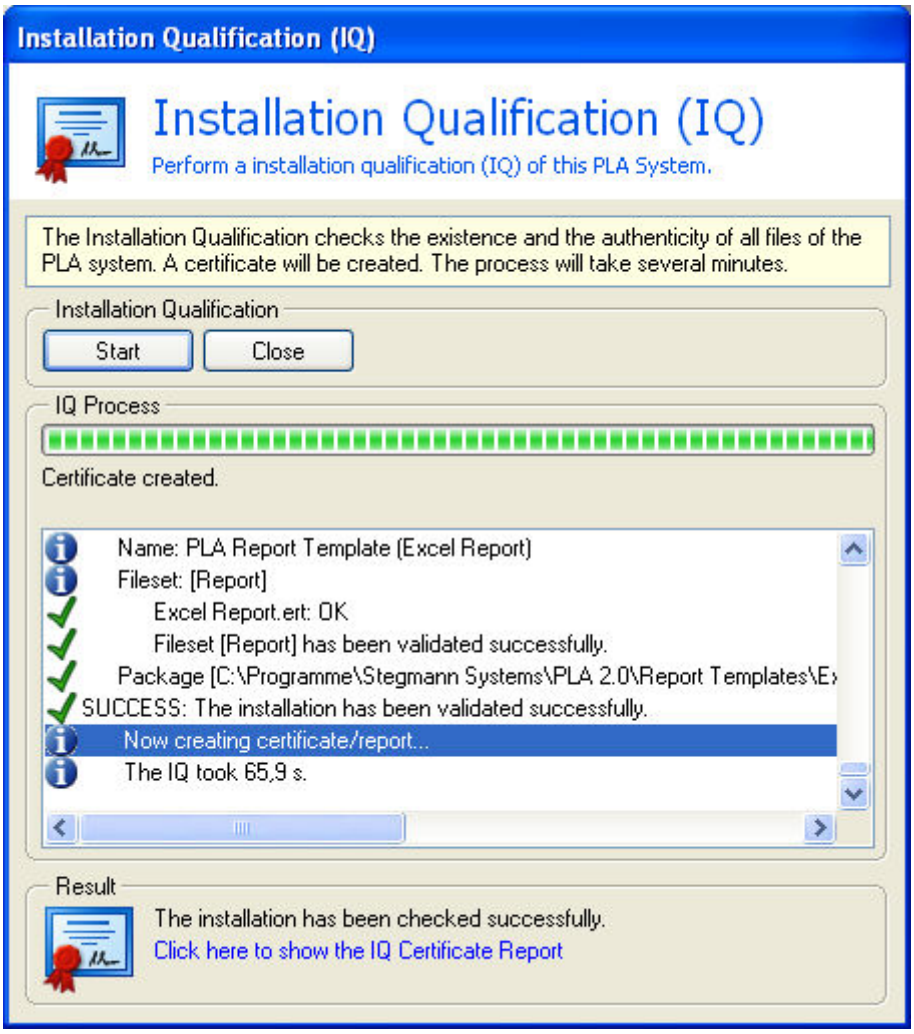
With this information a qualified machine can easily be identified. The certificate should be printed out an signed by the operator.

Optional Components of PLA

Report Templates and Import/Export Modules come with their own IQ-file which is secured like the base system IQ file. The IQ files are located in the component directories. If PLA finds such IQ files, they are checked during the IQ too. So you should re-evaluate the Installation Qualification after you installed or un-installed any optional component. The IQ certificate clearly tells which packages have been included in the process.

Performing the Installation Qualification

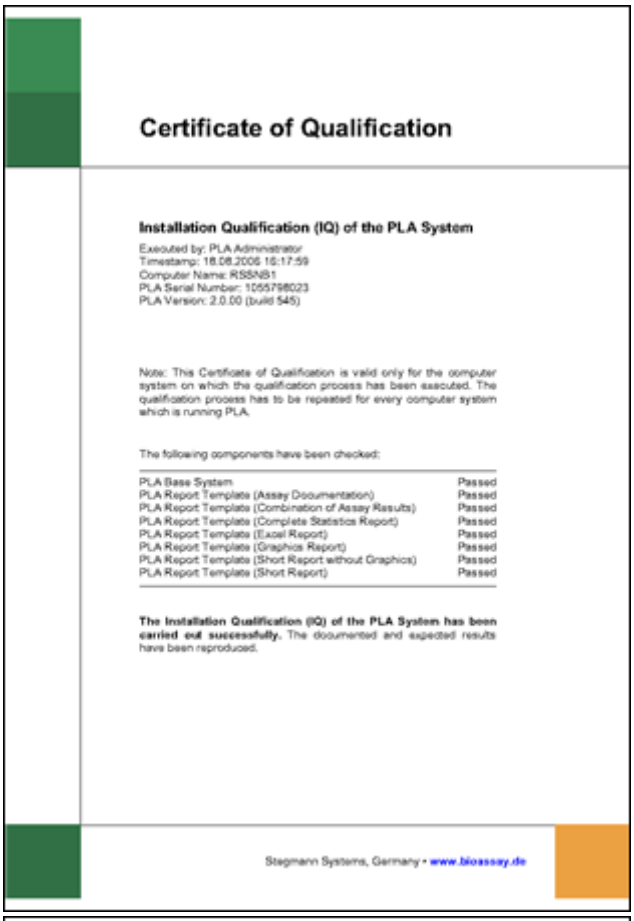
The processing of the installation qualification could not be easier than in PLA. Simply select the "Installation Qualification (IQ)" from the Validation menu of PLA. Then click Start to start the process. After a few seconds a report containing the certificate is created in the PDF format. The report is secured from manipulation using a one time password that cannot be recovered by PLA.


Installation Qualification (IQ)
Installation Qualification (IQ)
Perform a installation qualification (IQ) of this PLA System.
The Installation Qualification checks the existence and the authenticity of all files of the PLA system. A certificate will be created. The process will take several minutes.
Installation Qualification
Start
Close
IQ Process
Certificate created.
Name: PLA Report Template (Excel Report)
Fileset: [Report]
Excel Report.ert: OK
Fileset [Report] has been validated successfully.
Package [C:\Programme\Stegmann Systems\PLA 2.0\Report Templates\E
SUCCESS: The installation has been validated successfully.
Now creating certificate/report...
The IQ took 65,9 s.
Result
The installation has been checked successfully.
Click here to show the IQ Certificate Report

Click on the hyperlink in the result section of the wizard to open the certificate. The certificate is created in the default report directory of PLA.

If the Installation Qualification fails, there have been modifications to the system. In general the system should be re-installed then. Thoroughly check the error report, you receive to understand, what has changed in the system and why the installation qualification fails. Not every change necessarily compromises the system, but you should only continue to use PLA, when you successfully verified, that the system is intact.

Figure - A certificate of the IQ process (sample pages)



Certificate of Qualification

Installation Qualification (IQ) of the PLA System

Executed by: PLA Administrator
Timestamp: 18.08.2006 16:17:59
Computer Name: RS5NB1
PLA Serial Number: 1055798023
PLA Version: 2.0.00 (build 545)

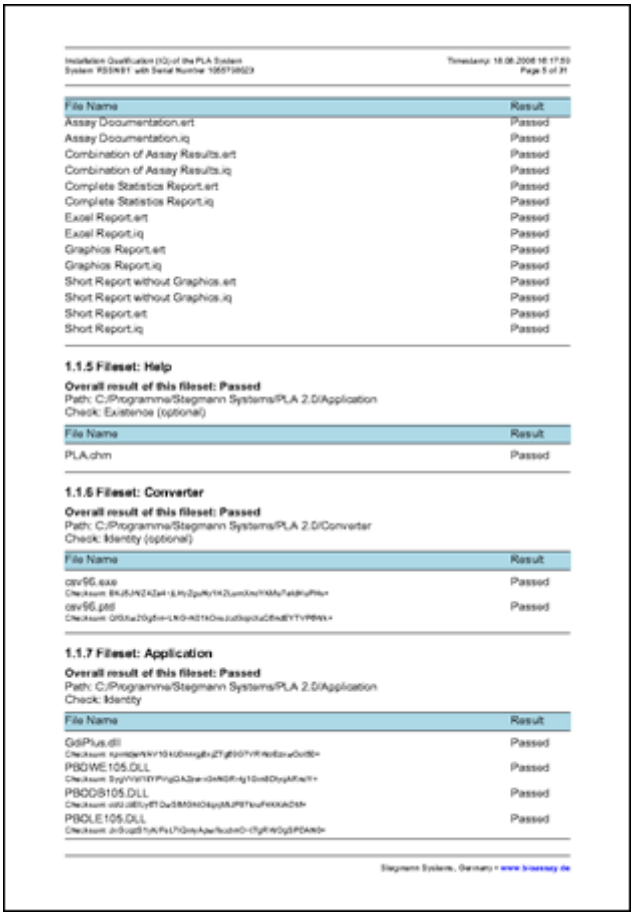
Note: This Certificate of Qualification is valid only for the computer system on which the qualification process has been executed. The qualification process has to be repeated for every computer system which is running PLA.

The following components have been checked:

PLA Base System	Passed
PLA Report Template (Assay Documentation)	Passed
PLA Report Template (Combination of Assay Results)	Passed
PLA Report Template (Complete Statistics Report)	Passed
PLA Report Template (Excel Report)	Passed
PLA Report Template (Graphics Report)	Passed
PLA Report Template (Short Report without Graphics)	Passed
PLA Report Template (Short Report)	Passed

The Installation Qualification (IQ) of the PLA System has been carried out successfully. The documented and expected results have been reproduced.

Stegmann Systems, Germany - www.bioassay.de



File Name	Result
Assay Documentation.ert	Passed
Assay Documentation.iq	Passed
Combination of Assay Results.ert	Passed
Combination of Assay Results.iq	Passed
Complete Statistics Report.ert	Passed
Complete Statistics Report.iq	Passed
Excel Report.ert	Passed
Excel Report.iq	Passed
Graphics Report.ert	Passed
Graphics Report.iq	Passed
Short Report without Graphics.ert	Passed
Short Report without Graphics.iq	Passed
Short Report.ert	Passed
Short Report.iq	Passed

1.1.5 Fileset: Help

Overall result of this fileset: Passed
Path: C:/Programme/Stegmann Systems/PLA 2.0/Application
Check: Existence (optional)

File Name	Result
PLA.chm	Passed

1.1.6 Fileset: Converter

Overall result of this fileset: Passed
Path: C:/Programme/Stegmann Systems/PLA 2.0/Converter
Check: Identity (optional)

File Name	Result
csv96.exe	Passed
csv96.pld	Passed

1.1.7 Fileset: Application

Overall result of this fileset: Passed
Path: C:/Programme/Stegmann Systems/PLA 2.0/Application
Check: Identity

File Name	Result
GdiPlus.dll	Passed
PBDWE105.DLL	Passed
PBDDB105.DLL	Passed
PBDLE105.DLL	Passed

Operational Qualification

The Operational Qualification Process

The Operational Qualification (OQ) of PLA checks the mathematical functionality of the system. PLA is fitted with a suite of 22 OQ Packages. These packages are designed to check every aspect of the mathematical functionality.

How does it work?

The automated OQ of PLA is devided into the following processes:

1. The assay data is decoded from the PLA.OQ file. During this process the digital signatures of package is verified using PLAs internal PKI. If the data is valid, the OQ processor imports the data into a temporary project.

2. The temporary project is calculated by PLA. PLA fills its internal result structures with the calculated data.

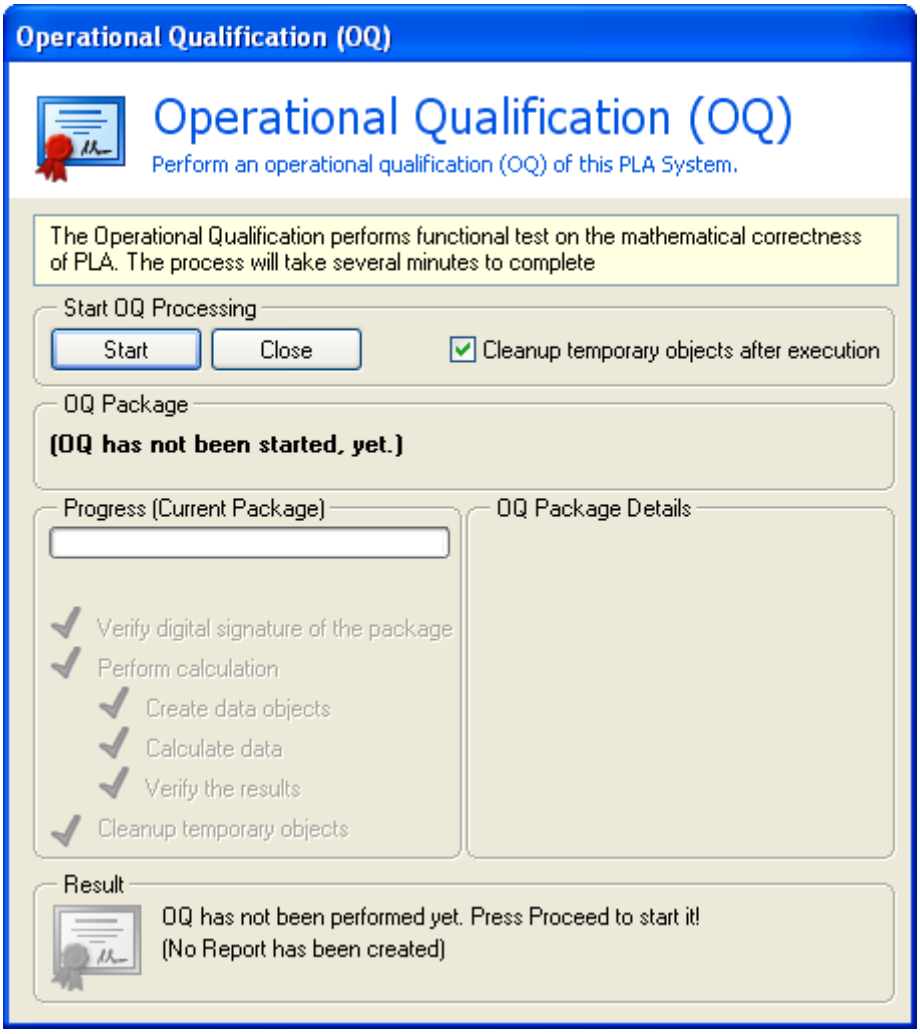
3. The internal result structures are compared to the result structures saved and secured in PLA.OQ If any error occurs the Automated OQ fails.

After this procedures has been executed with all 22 OQ Packages an OQ Certificate or an OQ Failure Report is generated.

If the OQ fails the corresponding PLA Installation has to be checked thoroughly. First of all the IQ should be processed. If it fails, reinstall PLA. If the IQ passed, though the OQ failed, contact support@bioassay.de.

Performing the Operational Qualification

From the Validation Menu select Operational Qualification (OQ). The following dialog appears:


Operational Qualification (OQ)
Operational Qualification (OQ)
Perform an operational qualification (OQ) of this PLA System.
The Operational Qualification performs functional test on the mathematical correctness of PLA. The process will take several minutes to complete
Start OQ Processing
Start
Close
Cleanup temporary objects after execution
OQ Package
(OQ has not been started, yet.)
Progress (Current Package)
OQ Package Details
Verify digital signature of the package
Perform calculation
Create data objects
Calculate data
Verify the results
Cleanup temporary objects
Result
OQ has not been performed yet. Press Proceed to start it!
(No Report has been created)

Press Start to start the OQ Process. This process can take up to 60 minutes. The certificate/error report is created in the standard output directory. The certificate can be launched by clicking on the hyperlink, that is available after the process finished.

Note: If you want to check the OQ with its documentation you can toggle the cleanup switch:

If you deactivated it, you can verify all the objects and calculation results after the OQ process has been finished.

Performance Qualification

The Performance Qualification Process

The Performance Qualification (PQ) is intended to test customer data with the mathematics of the PLA system. In PLA this process is divided into two steps:

1. Prepare your Performance Qualification Data
2. Execute the Performance Qualification on any target system

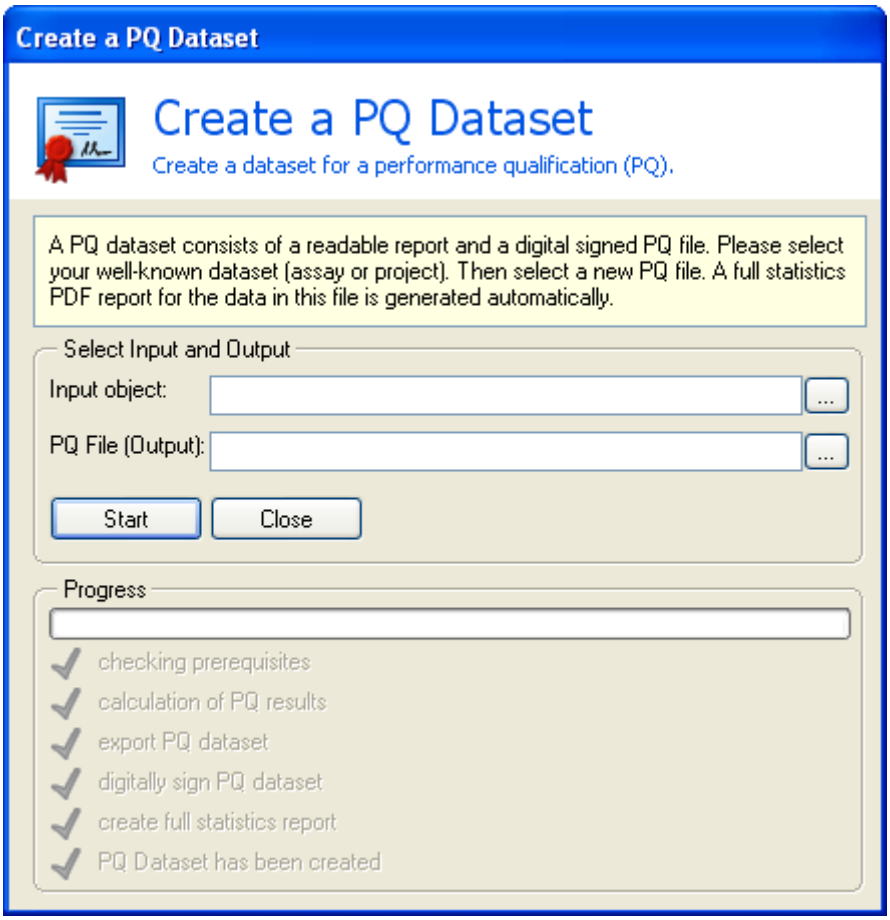
Note: When new PLA Version get available, it might be necessary to repeat both steps.

How does it work?

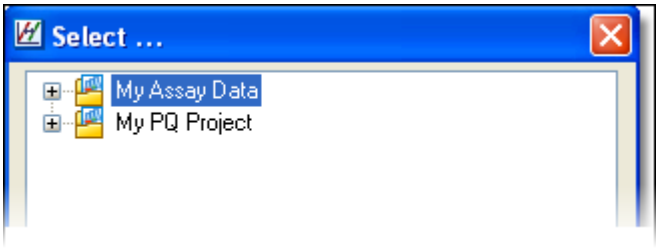
The Performance Qualification is prepared using the preparation wizard. Using this wizard you select your well-known PQ project inside PLA. The wizard calculates the comparison data and generates a PQ file as well as a Complete Statistics Report. The PQ file is secured from manipulation by the systems internal PKI. Once you have thoroughly checked the corresponding Complete Statistics Report, you can use the PQ to perform the Performance Qualification using the Performance Qualification Wizard.

Preparing the Performance Qualification

As a prerequisite you need to define your comparison data in PLA in any project. This project may contain any number of assays you want to include in your PQ data set. When finished, start the Performance Qualification Preparation Wizard from the Validation menu by selecting "Create a PQ dataset". The following wizard appears:


Create a PQ Dataset
Create a PQ Dataset
Create a dataset for a performance qualification (PQ).
A PQ dataset consists of a readable report and a digital signed PQ file. Please select your well-known dataset (assay or project). Then select a new PQ file. A full statistics PDF report for the data in this file is generated automatically.
Select Input and Output
Input object:
PQ File (Output):
Start
Close
Progress
checking prerequisites
calculation of PQ results
export PQ dataset
digitally sign PQ dataset
create full statistics report
PQ Dataset has been created

Now select the input object by pressing the button next to the corresponding input field and select your PQ project from the list:



Then select the filename of your PQ file. Press start to start the generation. The wizard now creates two files:

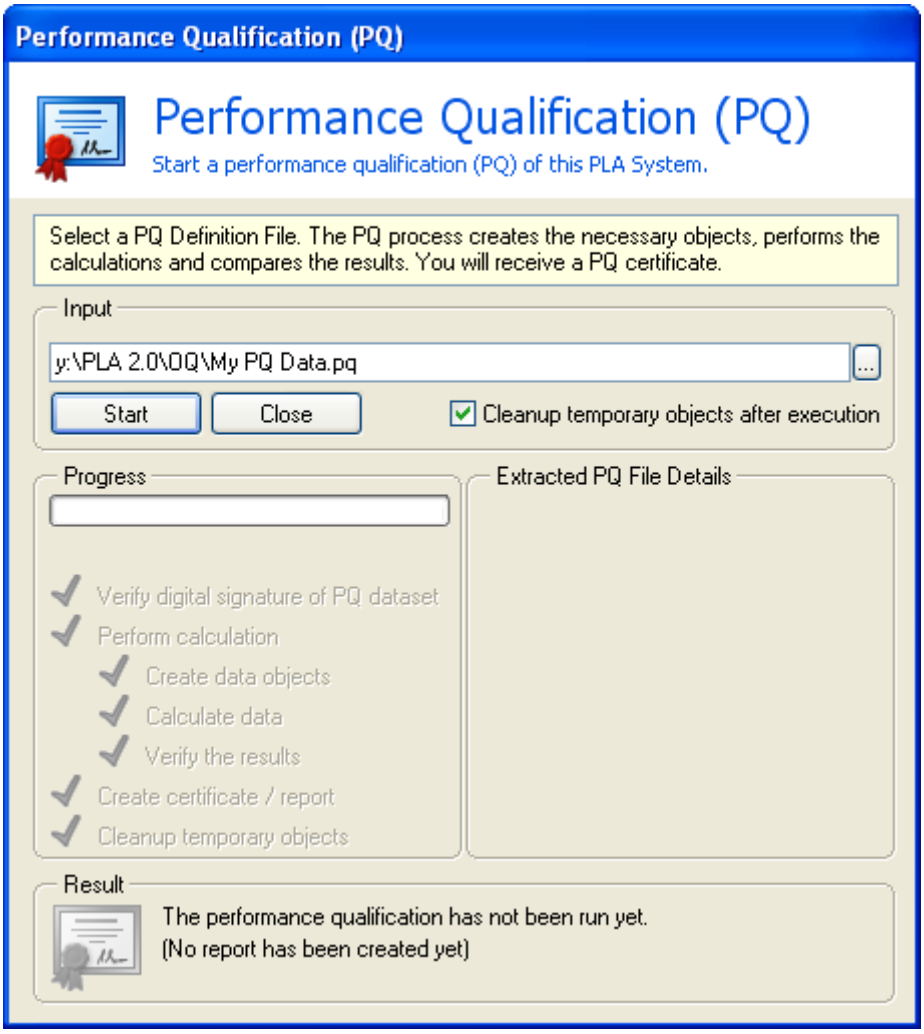
- the PQ file and
- the corresponding Complete Statistics Report

The Complete Statistics Report is located in the same directory as the PQ file.

Now you have to check the report for correctness. Once you have accepted the results, you can proceed to the Performance Qualification task.

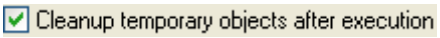
Performing the Performance Qualification

From the Validation Menu select Performance Qualification (PQ). The following dialog appears:


Performance Qualification (PQ)
Performance Qualification (PQ)
Start a performance qualification (PQ) of this PLA System.
Select a PQ Definition File. The PQ process creates the necessary objects, performs the calculations and compares the results. You will receive a PQ certificate.
Input
y:\PLA 2.0\OQ\My PQ Data.pq
Start
Close
Cleanup temporary objects after execution
Progress
Extracted PQ File Details
Verify digital signature of PQ dataset
Perform calculation
Create data objects
Calculate data
Verify the results
Create certificate / report
Cleanup temporary objects
Result
The performance qualification has not been run yet.
(No report has been created yet)

Select your PQ file using the button near the input field. Press Start to start the PQ Process. Depending on the size of your PQ file the process may need several minutes to complete. The certificate/error report is created in the standard output directory. The certificate can be launched by clicking on the hyperlink, that is available after the process finished.

Note: If you want to check the PQ with its documentation you can toggle the cleanup switch:



If you deactivated it, you can verify all the objects and calculation results after the PQ process has been finished.

IT Administration Guide

Welcome to the PLA IT Administration Guide

This guide is intended for those who are responsible to setup PLA in their environments. You will find all necessary information to setup PLA and you will find all information regarding administrative procedures.

Note: This guide requires basic knowledge of operating system administration.

Structure of this Guide:

- Description of for IT Professionals
- PLA Setup Basics
- PLA in Networked Environments
- Terminal Server Recommendations
- PLA Database Guide
- PLA License Management
- PLA User Management

Description of PLA for IT Professionals

PLA is a standard application for parallel-line analysis of biological assays. It is used by laboratory personal and scientist as well as in development of assays (tests) and in the application of these tests in quality control units.

PLA organizes the data of interest (assay data) in databases. The user can connect to different database systems. In general file based databases (Microsoft JET 4.0) and SQL Server based databases (Microsoft SQL Server, Oracle) can be distinguished.

Due to regulatory needs PLA has its own user account management. User account is stored per database. This makes for users especially in development labs to differentiate their security needs per project.

PLA is multi-user networking aware. Objects in the databases are automatically locked when they are used. The session and lock management of PLA is self-healing if they encounter problems (e.g. missing logouts). After some minutes inactive sessions and locks are automatically removed by PLA.

The PLA setup is Windows compliant. Restricted Users are able to work with PLA. Deeper Details about the Setup are found in the Setup Basics section of this manual. PLA can be installed in Terminal Server environments.

PLA Setup Basics

PLA is Microsoft Windows Compliant

- No write permission in the "Program Files" are required.
- PLA requires write permissions in the All Users\Application Data.
- PLA requires write permissions in the My files section of an user
- PLA requires write permissions to the Import/Export Module path if you want to save Import Definition Schemes

During installation administrative permissions are required.

PLA should be installed on the local hard drive. It is not recommended to install PLA on network drives. But you might point the report templates directory of PLA, the import/export directories and the import/export modules directory to central locations. This can be done within the options dialog of PLA.

Customizable Directories of PLA

In the Options dialog or in the registry the following customizable directories of PLA can be set:

Default Import Path	This path is the default path of the import wizard. All open operations of this wizard initially point to this directory. *By default this directory points to a PLA 2.0 sub-directory of the users personal folder.*
Default Export Path	This is the default target path of the export wizard. *By default this directory points to a PLA 2.0 sub-directory of the users personal folder.*
Default Output Path	This is the path where reports and certificates are created by default. *By default this directory points to a PLA 2.0 sub-directory of the users personal folder.*
Import/Export Modules	This is the path PLA uses to search for import and export modules. PLA might require write permissions in this directory to save Import Definition Schemes. *By default this path points to the "Converter" sub-directory of the PLA 2.0 base installation path.*
Report Templates	In this directory the report templates of PLA are installed. *By default this path points to the Report Templates sub-directory of the PLA 2.0 base installation path.*

Other Directories of Interest

Base Installation Path	This is the target path you select when you install PLA. *By default this directory points to a Stegmann Systems\PLA 2.0 subdirectory of the systems programs folder (e.g. c:\program files\Stegmann Systems\PLA 2.0)*
Application Path	This is a sub-directory of the base installation path. This directory contains the PLA Main Program and libraries.
Application Data	Application Data is stored in the All Users and in the Users personal folder in the Documents and Settings section.
Temporary Files	Temporary files are stored in the Temp sub-directory of the Application Data Directory of the user. PLA automatically takes care of this folder.

Hardlock Installation

PLA makes use of the Hardlock Protection by Aladdin Systems. The device drivers for the hardlock system are installed automatically during the setup process. They appear as Hardlock Drivers in the Software section of the system configuration. If they are removed they can be reinstalled by hand. Current drivers can be found under www.aladdin.com.

Security Basics

User Account Security

Due to regulatory needs PLA has its own user account management. Accounts are stored in the PLA databases, so security can not be compromised by copying data to another location.

The user account system in PLA is role based. PLA distinguishes three roles:

Standard Users
Standard Users are allowed to modify objects within the restriction a PLA administrator gave. They are not allowed to modify security relevant options or to manage user accounts.

Administrators
They manage users and define the security relevant options within PLA.

Inspectors
They have read only access to the objects, but they are allowed to electronically sign objects.

Data Integrity

PLA makes use of its own Public Key Infrastructure. All objects within the database are signed using a digital signature. This signature is checked every time, PLA access the object. If the signature is invalid for any reason, PLA refuses to open the object.

In addition to the objects (projects, assays, standards, preparations and controls) even the user accounts and the options are digitally signed too. All of these signatures include a unique database identifier. This database identifier is verified each time an object is accessed.

By these techniques it is not possible, to modify definitions or to move elements such as user accounts to other installations without invalidating them. So don't try to modify anything in the PLA databases.

Database Security

The file based databases of PLA are secured. For the SQL Server based databases it is recommended not to communicate the database access information directly to the user. The database administrators / PLA administrators should define the database connections for the end users. Another possibility is to directly install the database connections via registry. (Advanced Database Administration)

Database Guide

PLA Databases

PLA makes use of databases to store assay data, audit trails, user account data and system options. There are two types of databases:

- **File-based Database**
  This type of database can be generated on any local or shared drive. Multiple Users can connect to this database when it is located on a shared drive. The file based database is a secured Microsoft JET database.
  Note: We do not recommend to connect more than 3 concurrent users to this database type.

- **SQL Server Database**
  PLA allows to use a Microsoft SQL Server Database (MS SQL Server 2000 or higher, MSDE supported)
  Depending on your license PLA can accept nearly any number of connection to this type of database. It should be preferred if you have a SQL Server available.

PLA Database Maintenance

There are a few Maintenance Tasks for PLA databases.

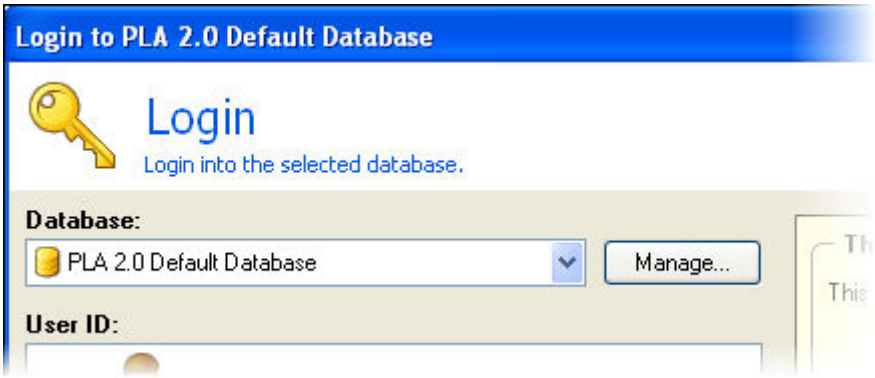
Backup The Databases

PLA Databases have to be backed up on a regular basis. It is the task of the IT Administration to create backups of file based and SQL Server based databases. Stegmann Systems recommends to create backups every day.

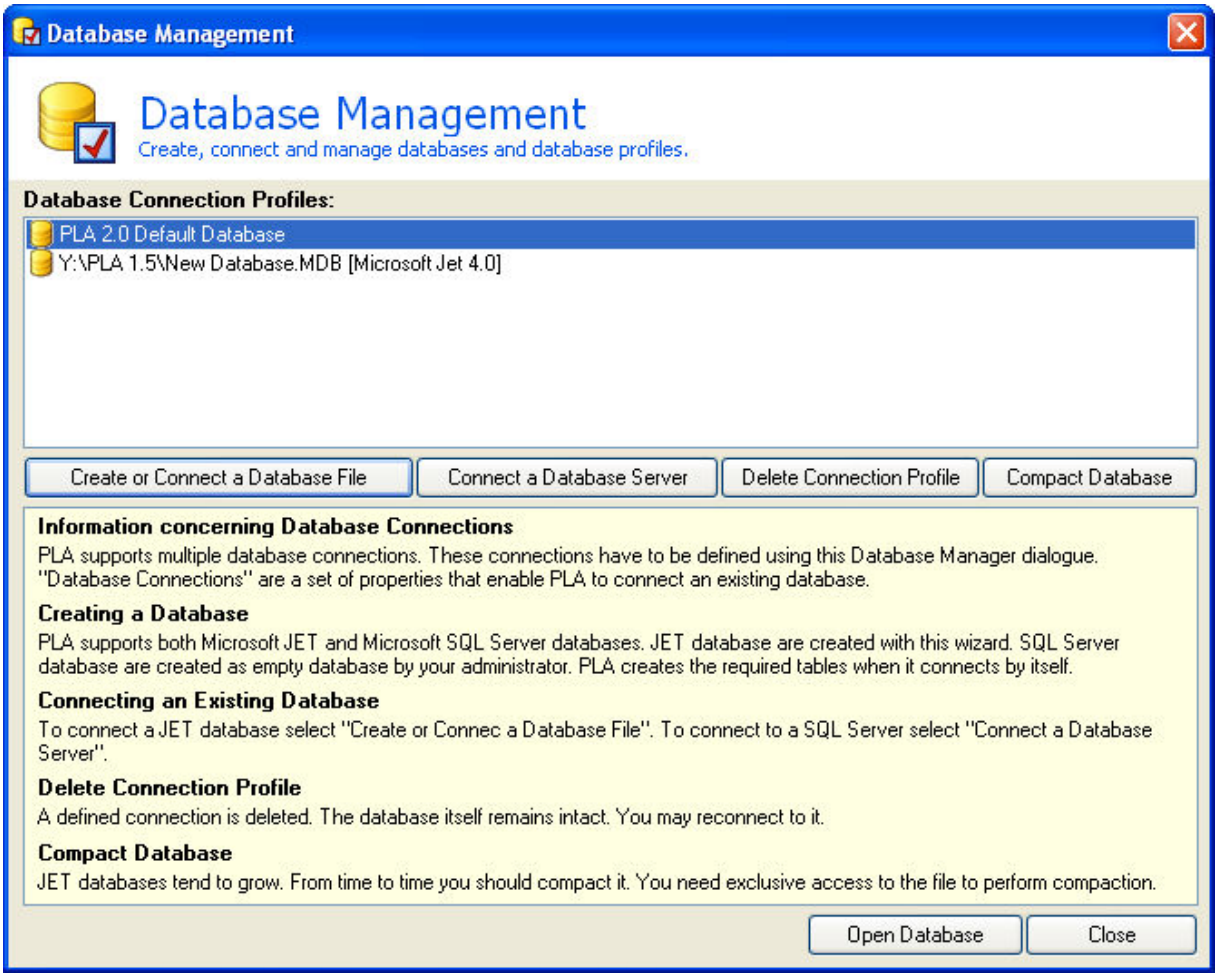
Create A Database

Create A File-Based Database

From the Login-Dialog select "Manage..." on the right of the database selector.



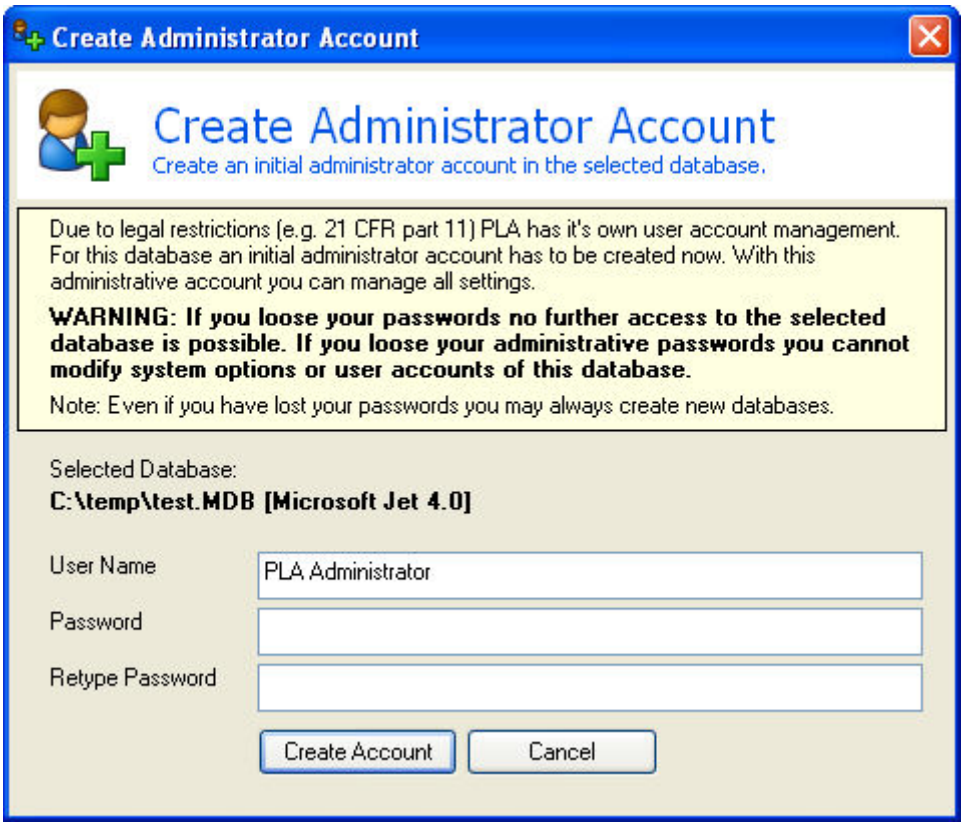
The Database Management dialog appears


Database Management
Database Management
Create, connect and manage databases and database profiles.
Database Connection Profiles:
PLA 2.0 Default Database
Y:\PLA 1.5\New Database.MDB [Microsoft Jet 4.0]
Create or Connect a Database File
Connect a Database Server
Delete Connection Profile
Compact Database
Information concerning Database Connections
PLA supports multiple database connections. These connections have to be defined using this Database Manager dialogue. "Database Connections" are a set of properties that enable PLA to connect an existing database.
Creating a Database
PLA supports both Microsoft JET and Microsoft SQL Server databases. JET database are created with this wizard. SQL Server database are created as empty database by your administrator. PLA creates the required tables when it connects by itself.
Connecting an Existing Database
To connect a JET database select "Create or Connec a Database File". To connect to a SQL Server select "Connect a Database Server".
Delete Connection Profile
A defined connection is deleted. The database itself remains intact. You may reconnect to it.
Compact Database
JET databases tend to grow. From time to time you should compact it. You need exclusive access to the file to perform compaction.
Open Database
Close

Click on the "Create or Connect a Database File" button. A standard file open dialog appears. Select the directory and type in the name of a new database file.

Note: If you select an existing database, nothing is created but you will be connected to this database.

After you created a new database the new database appears in the list of defined connection profiles. Select it and click open database to connect to it. You are immediately asked for an administrator password for the first administrator of this database:


Create Administrator Account
Create Administrator Account
Create an initial administrator account in the selected database.
Due to legal restrictions (e.g. 21 CFR part 11) PLA has it's own user account management. For this database an initial administrator account has to be created now. With this administrative account you can manage all settings.
WARNING: If you loose your passwords no further access to the selected database is possible. If you loose your administrative passwords you cannot modify system options or user accounts of this database.
Note: Even if you have lost your passwords you may always create new databases.
Selected Database:
C:\temp\test.MDB [Microsoft Jet 4.0]
User Name
PLA Administrator
Password
Retype Password
Create Account
Cancel

Type in a password. Note: The password cannot be recovered if you loose it.

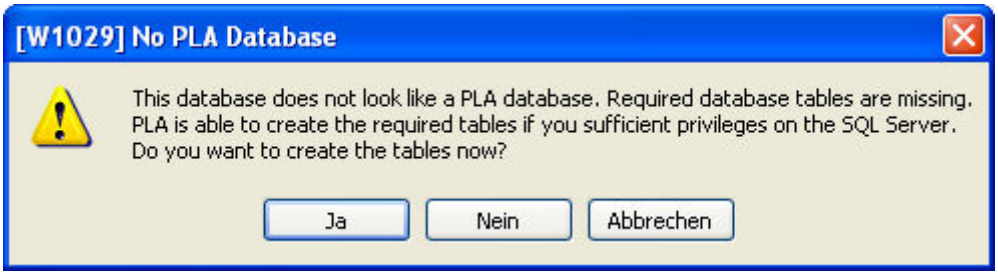
Create A SQL Database (Connection)

This section requires basic knowledge on database administration.

The first step has to be done by your database administrator. He has to create a new empty database and he has to define a user id that has to be able to create tables and indices within this database (DB Owner permissions). Once this is finished you can go ahead with PLA.

Open the Database Management as describes above, then select Connect a Database Server. A standard dialog of the operating system appears that allows to input the connection data for the new database. Select your server and database and type in the userid and password you created on the database server. Then press ok.

Open the database. If this is the first time the database is opened by PLA, you are asked to create the tables and indices PLA requires. The following dialog appears:


[W1029] No PLA Database
This database does not look like a PLA database. Required database tables are missing. PLA is able to create the required tables if you sufficient privileges on the SQL Server. Do you want to create the tables now?
Ja
Nein
Abbrechen

Select Yes to create the tables. After the tables are created, you are asked for an initial PLA Administrator password as seen above.

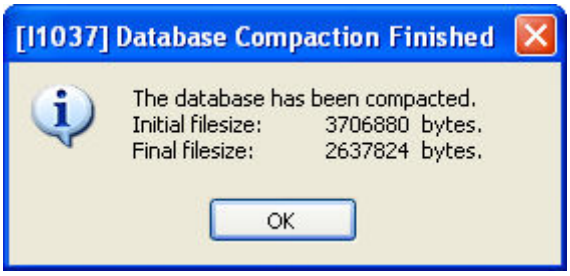
Remove Database Connections

Unused Database Connection can be removed by the Database Management Dialog. This does not delete the database either from the file system nor a SQL Server database.

Compact Database

File-based Databases can grow up to 2 GB during work. They might be internally fragmented while time passes. From time to time you should compact the database. This defragments the database and removes unused file space from the database.

In the Database Management select the database to be compacted and then press Compact Database. After the compaction succeeded you receive a message on the saved space:



Note: you need exclusive access to the database to compact it.

Advanced Database Administration

Distribution of Connection Profiles Using Registry Settings

In management environments you can distribute connection profiles of PLA Server setting to the end-user systems by registry files, by your software distribution system or by active directory distribution.

Create a database connection to the required database using PLA 2.0. The database connection string can be found in the registry under the key:

HKEY_LOCAL_MACHINE\Software\Stegmann Systems\PLA 2.0\Connections

Under this key you find each connection as a REG_SZ variable. The name of the variable defines the connection name. This can be freely edited. The value is a cryptographically secured connection information to the database. It has to be copied as is.

The simplest way to communicate these settings is to export the variable using REGEDIT and import the setting by double-clicking the .REG-File created by the export.

PLA License Management

Since PLA is a special application for a very small market, PLA is secured by a license management. This license management distiguishes between the trial mode and retail mode of PLA.

Retail Mode

In Retail Mode PLA is delivered either with a desktop hardlock or with a network hardlock, depending on the license you purchased.

Seat License

The hardlock has to be connected to the local parallel-port or USB port (PLA Setup).

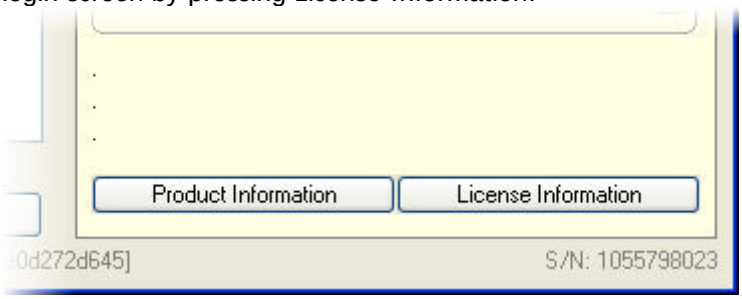
Concurrent Use License

This type of License is shared across the network. It is also necessary if you want to use PLA on a Terminal Server Solution. The concurrent use license model requires a license in the network which can be a normal workstation, if it is assured, that the workstation is switched on during your business hours. Connect the Hardlock Server to the USB of the computer, that will serve as a license server and install the hardlock server Software from the installation CD.

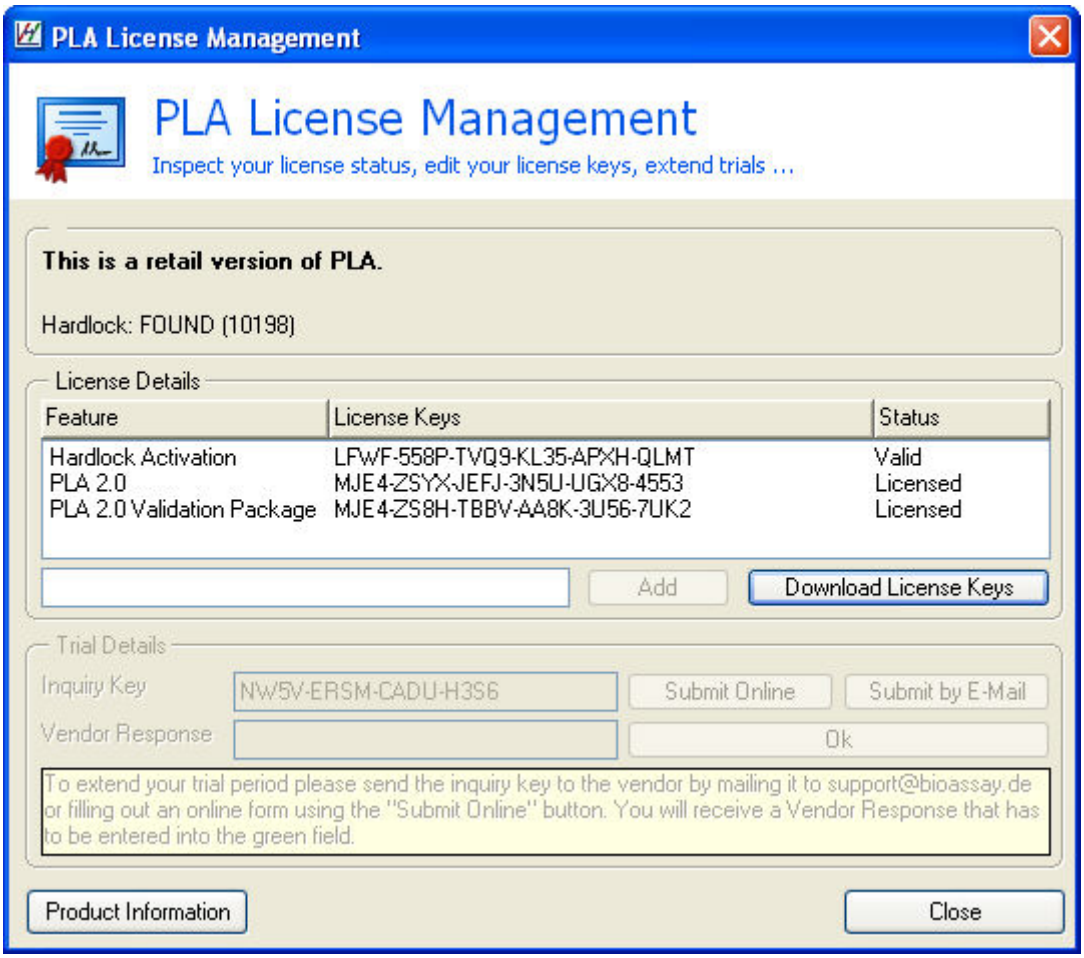
The hardlock server manages the number of license you purchased. If the number of users exceed the license limit, the connecting will receive a message to try again later.

License Numbers

In addition to the hardlock you have received a set of two or three license numbers. They have to be typed in (or downloaded) in the License Management Dialog. This dialog can be opened from the login screen by pressing License Information:



The License Management Dialog appears:



Press "Download License Keys" if you have an internet connection or type in the license keys you have received with your license.

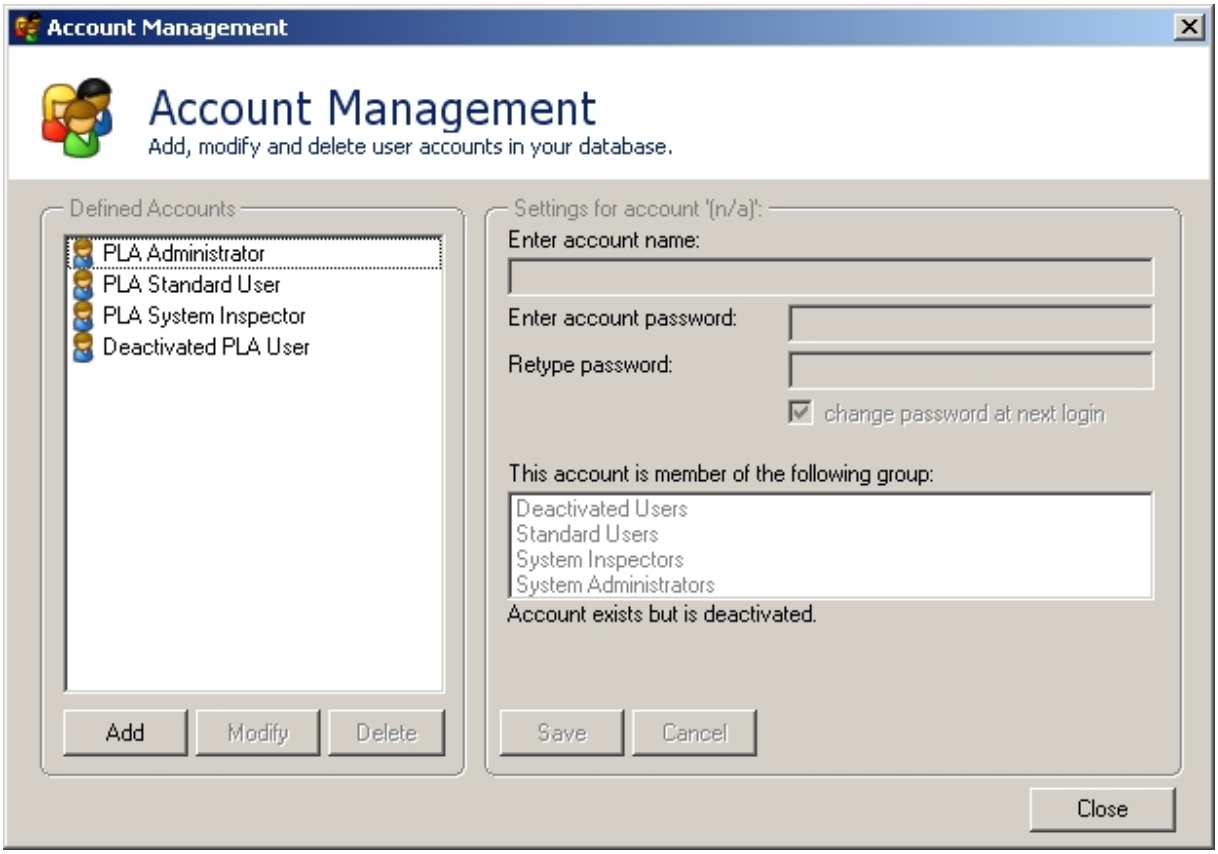
Note: The License Keys match the hardlock id. If your License Keys are marked as invalid, check that your hardlock id matches the keys.

Reference

User Interface Reference

Account Management

The Account Management dialog allows you to create new user accounts and to modify or delete existing ones.



Defined Accounts

A list of existent accounts.
Selecting an account allows you to delete or modify it.

Add

Create a new account.

Modify

Modify the selected account.

Delete

Delete the selected account.

Account Name

Allows you to enter or modify the name of the account. Each account requires a unique name.

Account Password

When creating a new account or modifying an existing one you can set its password by typing it into the corresponding field and retyping it in the field below. Remember that passwords are case-sensitive.

Change password at next login

When creating a new account or modifying an existing one and enabling this option, the user defined by this account is forced to change his password at his next login.

User Groups

Each account is member of one group. A group defines the rights, an account has within the PLA system. The currently assigned group is highlighted. You might assign the current account to another group simply by selecting it in the list of groups.

Description of the PLA groups:

- *Administrators:*

  Administrators have full access rights.
  They modify GxP / SOP Settings and manage accounts.

- *Standard Users:*

  This is a regular working account.
  Access rights are limited through the GxP / SOP Settings defined by an Administrator.

- *System Inspectors:*

  Accounts assigned to this group have read-only access.
  They are allowed to view all objects, but not to modify them.

- *Deactivated Users:*

  Existing accounts, that are (temporarily) deactivated.
  Users having deactivated accounts cannot log in.

Save

Save the newly created or modified account .

Cancel

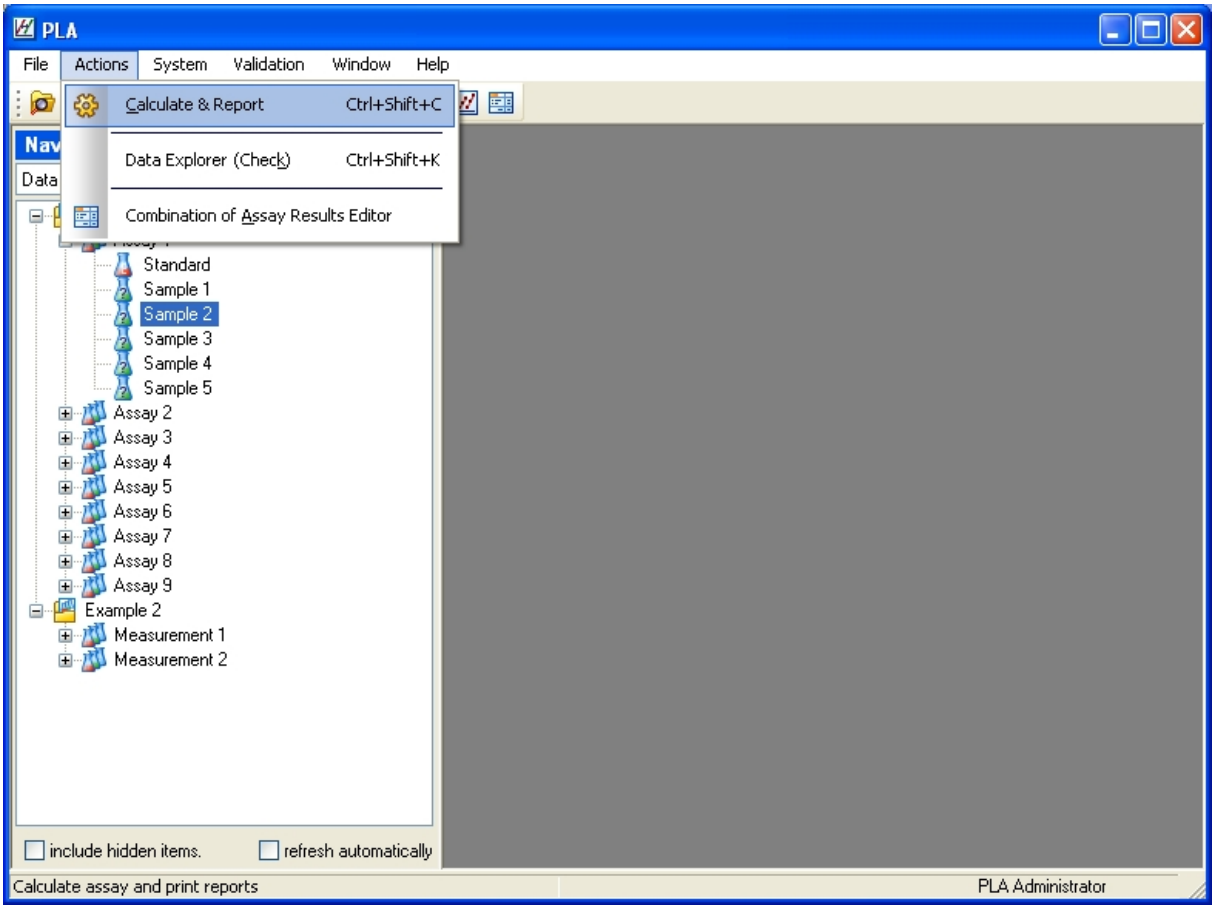
Cancel the creation or modification of an account and discard all changes.

Close

Close the Account Management dialog.

Action Menu

This topic describes PLA's Action Menu.



Calculate & Report

Opens the Calculate & Report Dialog which allows you to start the calculation process and create reports.

Data Explorer (Check)

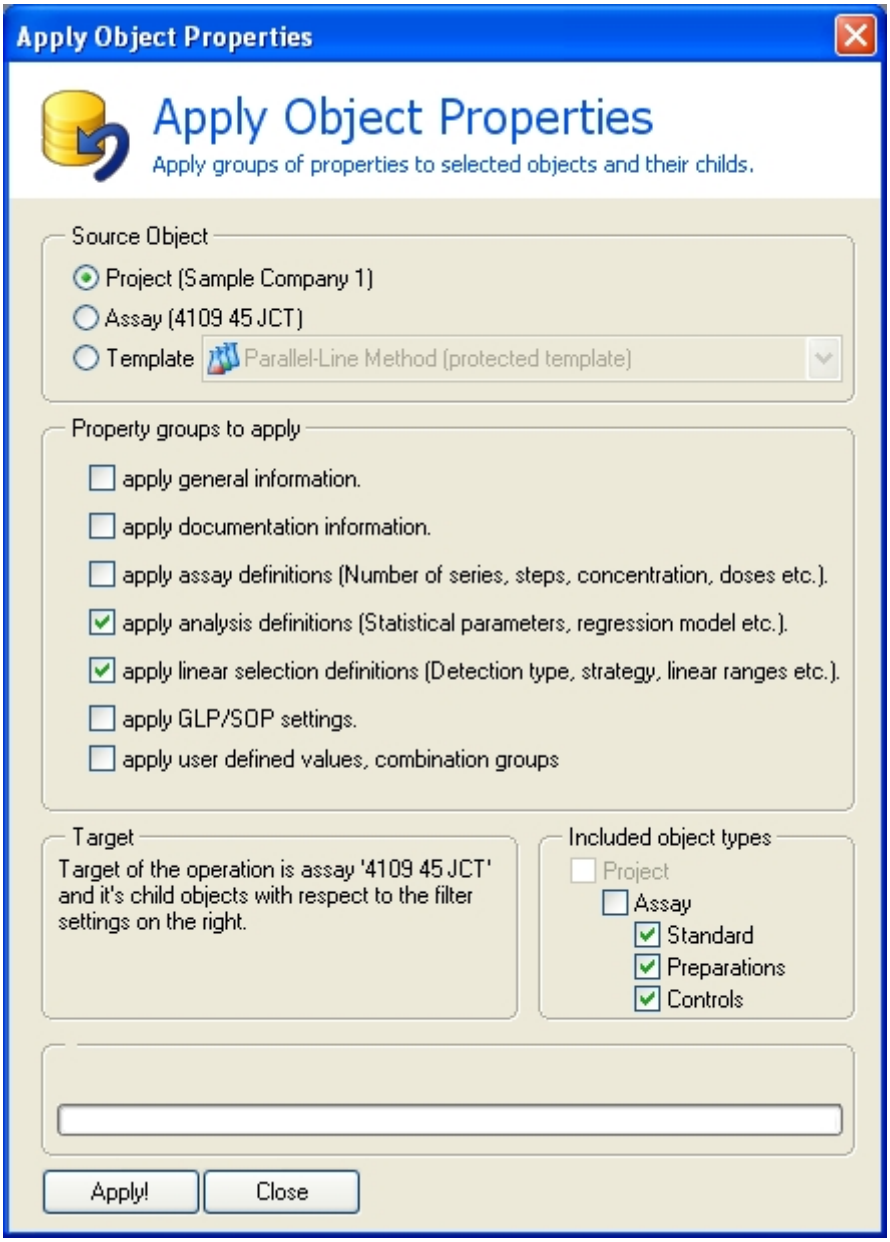
Opens the Data Explorer (Check Dialog) which shows you a graphical overview of your assay and preliminary calculation results. See how to Explore your Assay.

Combination of Assay Results Editor

Opens the Combination of Assay Results Dialog, which allows you to define Groups for Combination of Assay Results.

Apply

This dialog allows you to apply object properties to multiple objects at once.


Apply Object Properties
Apply Object Properties
Apply groups of properties to selected objects and their childs.
Source Object
Project (Sample Company 1)
Assay (4109 45 JCT)
Template
Parallel-Line Method (protected template)
Property groups to apply
apply general information.
apply documentation information.
apply assay definitions (Number of series, steps, concentration, doses etc.).
apply analysis definitions (Statistical parameters, regression model etc.).
apply linear selection definitions (Detection type, strategy, linear ranges etc.).
apply GLP/SOP settings.
apply user defined values, combination groups
Target
Target of the operation is assay '4109 45 JCT' and it's child objects with respect to the filter settings on the right.
Included object types
Project
Assay
Standard
Preparations
Controls
Apply!
Close

Source Object

Select the source of the properties which will be applied to the target objects.

- **Project**
  Use the selected project or the parent project of the selected object as source
- **Assay**
  Use the selected assay or the parent assay of the selected object as source
- **Template**
  Use a template as source. You can specify the template by selecting one from the template list to the right.

Property groups to apply

Select the property groups, which you want to apply. The groups correspond to the property pages of the object editor dialog described here in Introduction.

Target

Shows you to which objects the properties will be applied.

Included Object Types

This allows you to filter the objects to which the properties will be applied by their type. The properties will be applied to the selected object types only.

Apply!

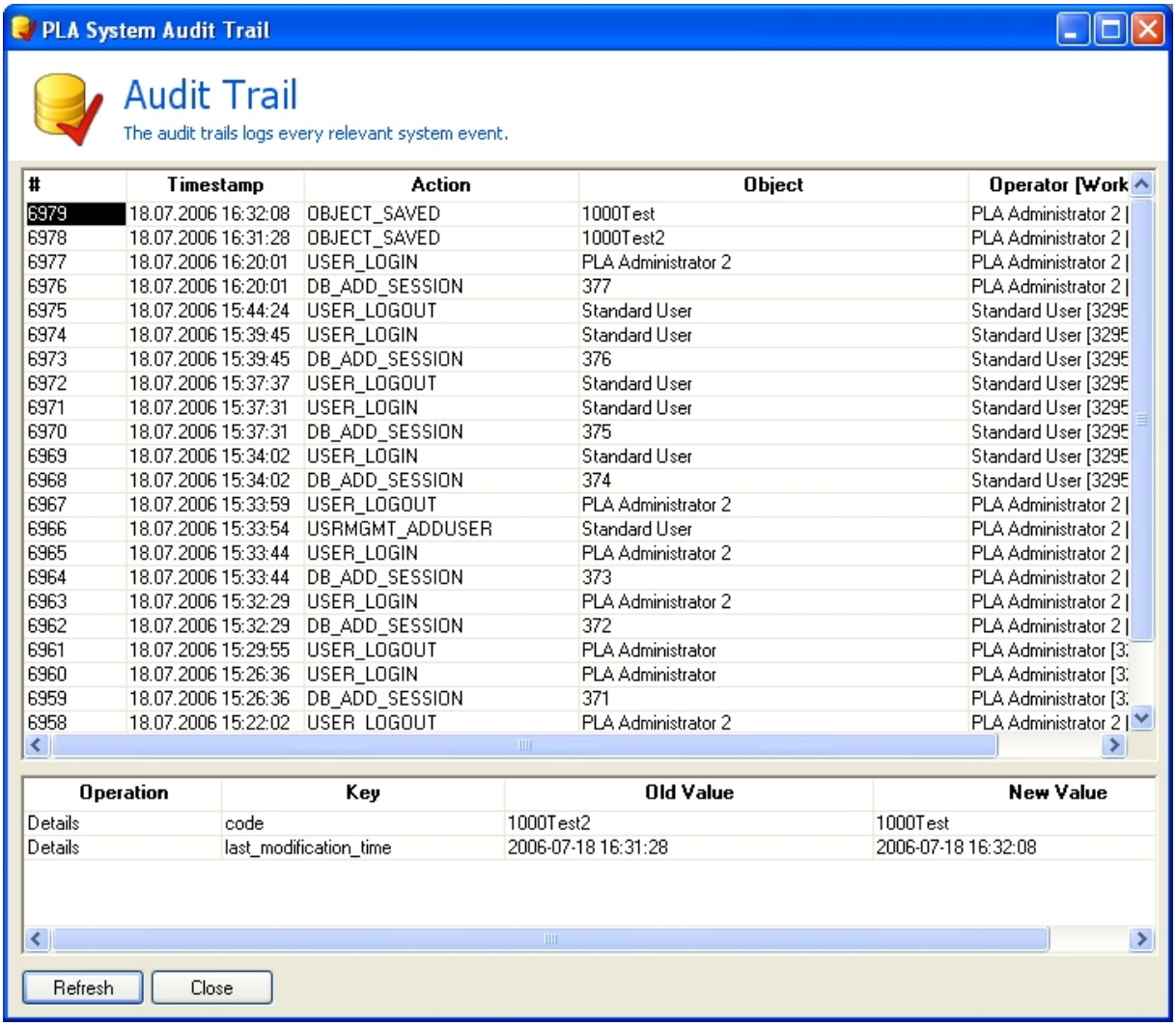
Apply the selected properties.

Close

Close this dialog.

Audit Trail

Shows Audit Trail information by listing operations and their details.


PLA System Audit Trail
Audit Trail
The audit trails logs every relevant system event.
| Timestamp | Action | Object | Operator [Work
6979 | 18.07.2006 16:32:08 | OBJECT_SAVED | 1000Test | PLA Administrator 2 |
6978 | 18.07.2006 16:31:28 | OBJECT_SAVED | 1000Test2 | PLA Administrator 2 |
6977 | 18.07.2006 16:20:01 | USER_LOGIN | PLA Administrator 2 | PLA Administrator 2 |
6976 | 18.07.2006 16:20:01 | DB_ADD_SESSION | 377 | PLA Administrator 2 |
6975 | 18.07.2006 15:44:24 | USER_LOGOUT | Standard User | Standard User [3295
6974 | 18.07.2006 15:39:45 | USER_LOGIN | Standard User | Standard User [3295
6973 | 18.07.2006 15:39:45 | DB_ADD_SESSION | 376 | Standard User [3295
6972 | 18.07.2006 15:37:37 | USER_LOGOUT | Standard User | Standard User [3295
6971 | 18.07.2006 15:37:31 | USER_LOGIN | Standard User | Standard User [3295
6970 | 18.07.2006 15:37:31 | DB_ADD_SESSION | 375 | Standard User [3295
6969 | 18.07.2006 15:34:02 | USER_LOGIN | Standard User | Standard User [3295
6968 | 18.07.2006 15:34:02 | DB_ADD_SESSION | 374 | Standard User [3295
6967 | 18.07.2006 15:33:59 | USER_LOGOUT | PLA Administrator 2 | PLA Administrator 2 |
6966 | 18.07.2006 15:33:54 | USRMGMT_ADDUSER | Standard User | PLA Administrator 2 |
6965 | 18.07.2006 15:33:44 | USER_LOGIN | PLA Administrator 2 | PLA Administrator 2 |
6964 | 18.07.2006 15:33:44 | DB_ADD_SESSION | 373 | PLA Administrator 2 |
6963 | 18.07.2006 15:32:29 | USER_LOGIN | PLA Administrator 2 | PLA Administrator 2 |
6962 | 18.07.2006 15:32:29 | DB_ADD_SESSION | 372 | PLA Administrator 2 |
6961 | 18.07.2006 15:29:55 | USER_LOGOUT | PLA Administrator | PLA Administrator [3
6960 | 18.07.2006 15:26:36 | USER_LOGIN | PLA Administrator | PLA Administrator [3
6959 | 18.07.2006 15:26:36 | DB_ADD_SESSION | 371 | PLA Administrator [3
6958 | 18.07.2006 15:22:02 | USER_LOGOUT | PLA Administrator 2 | PLA Administrator 2 |
Operation | Key | Old Value | New Value
Details | code | 1000Test2 | 1000Test
Details | last_modification_time | 2006-07-18 16:31:28 | 2006-07-18 16:32:08
Refresh
Close

Operation List

A list of operations showing you which actions have been executed by which user at which time.

Operation Details

If an action from the above list is selected, the details of the selected action are displayed if available.

Refresh

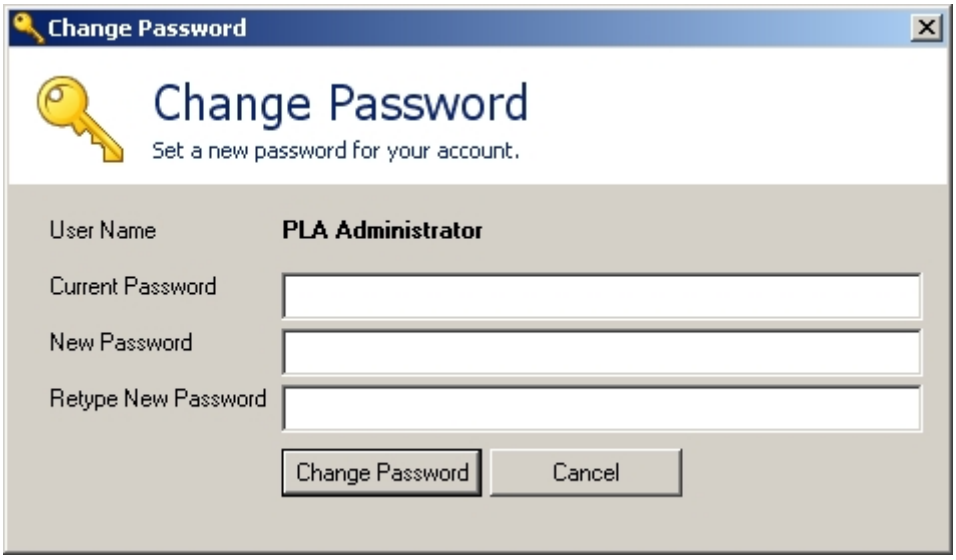
Refresh the list from the database.

Close

Close this dialog.

Change your Password

This dialog allows you to change your password.



User Name

Your user name (account name) is displayed here.

Current Password

Enter your current password into this field.

New Password

Enter your desired new password into this field.

Retype New Password

Reenter your new password in this field.

Change Password

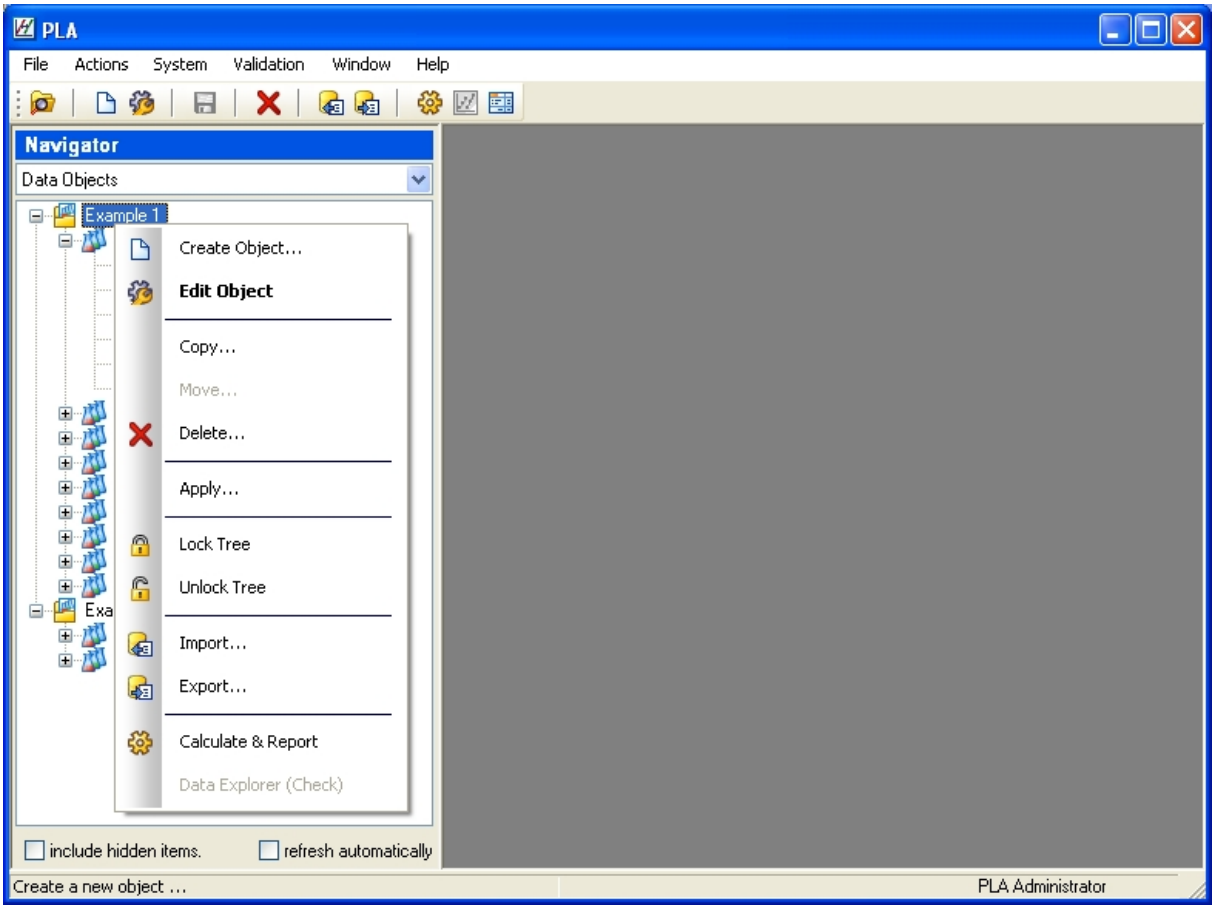
Clicking this button changes your password.

Cancel

Clicking this button cancels changing your password and closes this dialog.

Context Menu

This topic describes the Context Menu of the PLA Navigator..



Create Object

Create a new object.
See also: Create Object Dialog

Edit Object

Edit the selected object's properties and definitions.
See also: The Editor

Copy

Copy the selected object.
See also: Copying and Moving of Objects

Move

Move the selected object.
See also: Copying and Moving of Objects

Delete

Delete the selected objects and all of it's child objects.

Apply

Apply a template or project definitions to the selected object.
See also: Apply Dialog

Lock Tree

Lock the selected object and all of it's descendants.
See also: Locking Objects

Unlock Tree

Unlock the selected object and all of it's descendants.
See also: Locking Objects

Import

Open the import wizard to import data into PLA.
See also: Import

Export

Open the export wizard to export data from PLA into a file.
See also: Export

Calculate & Report

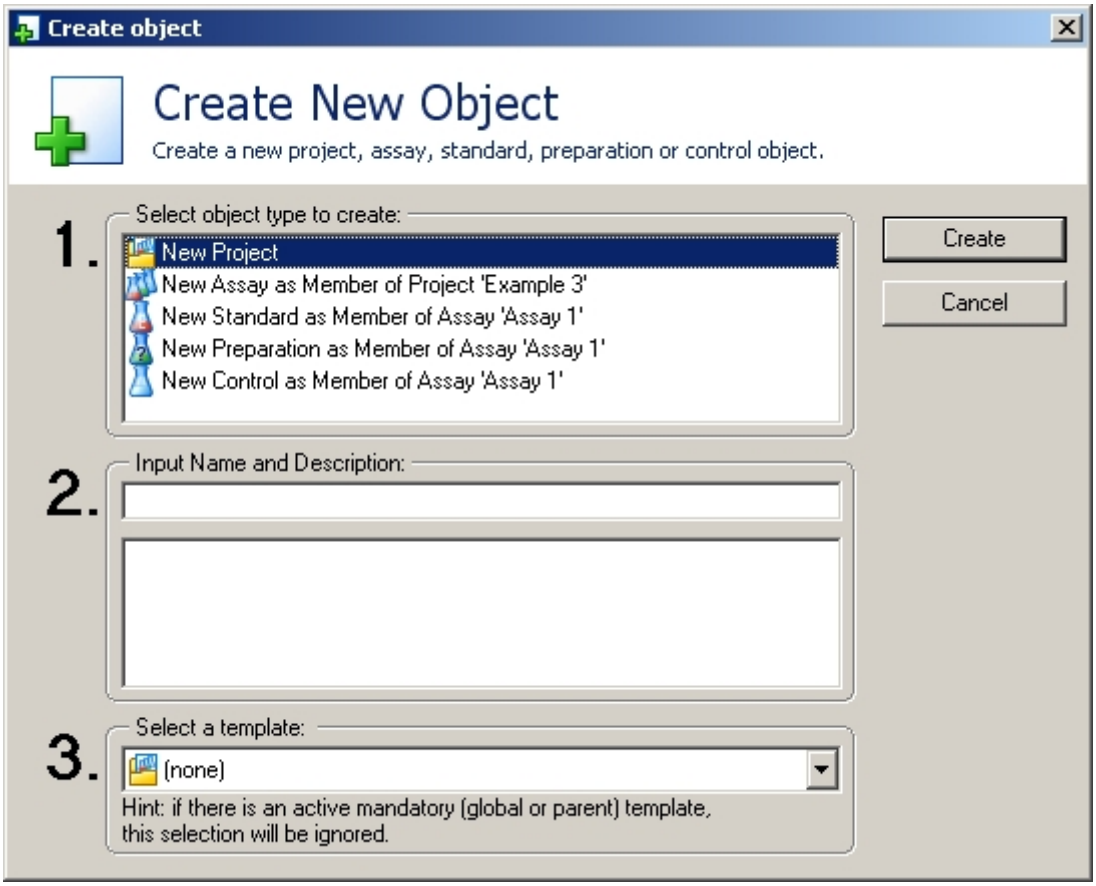
Opens the Calculate & Report Dialog which allows you to start the calculation process and create reports.
See also: Calculate & Report

Data Explorer

Opens the Data Explorer (Check Dialog) which shows you a graphical overview of your assay and preliminary calculation results.
See also: Explore your Assay

Create Object

This dialog allows you to create a new object.


Create object
Create New Object
Create a new project, assay, standard, preparation or control object.
1.
Select object type to create:
New Project
New Assay as Member of Project 'Example 3'
New Standard as Member of Assay 'Assay 1'
New Preparation as Member of Assay 'Assay 1'
New Control as Member of Assay 'Assay 1'
Create
Cancel
2.
Input Name and Description:
3.
Select a template:
(none)
Hint: if there is an active mandatory (global or parent) template,
this selection will be ignored.

New Project

This option allows you to create a new Project.

New Assay

This option allows you to create a new Assay as member of the currently selected Project.

New Standard

This option allows you to create a new Standard as member of the currently selected Assay.

New Preparation

This option allows you to create a new Preparation as member of the currently selected Assay.

New Control

This option allows you to create a new Control as member of the currently selected Assay.

Name

Enter the name of the object you want to create here.

Description

You can optionally enter an description for the object you want to create here.

Template

Select a template for the new object.

Create

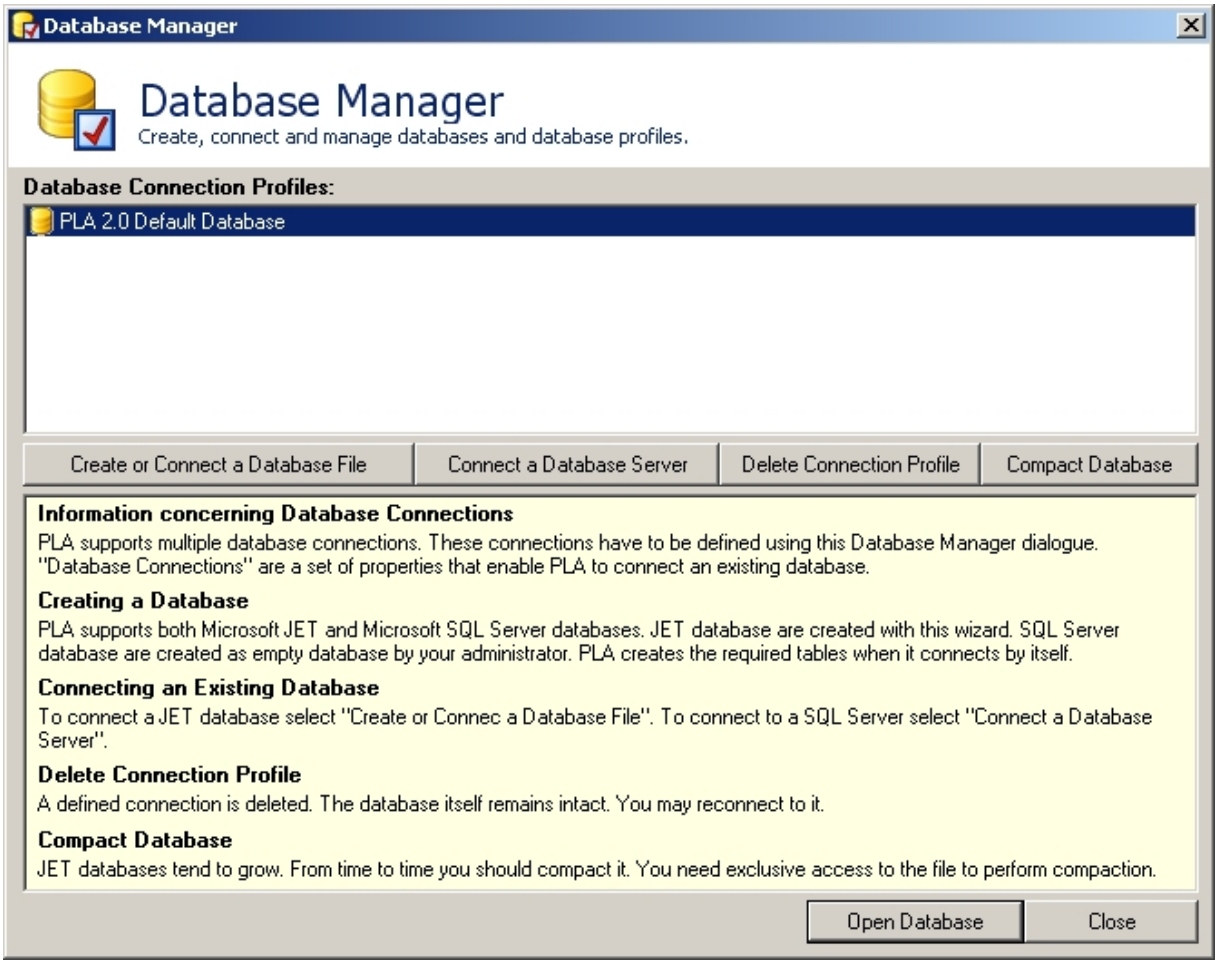
Click this button to create the object.

Cancel

Click here to cancel the object creation process.

Database Manager

The Database Manager allows you to manage your database connections.


Database Manager
Database Manager
Create, connect and manage databases and database profiles.
Database Connection Profiles:
PLA 2.0 Default Database
Create or Connect a Database File
Connect a Database Server
Delete Connection Profile
Compact Database
Information concerning Database Connections
PLA supports multiple database connections. These connections have to be defined using this Database Manager dialogue. "Database Connections" are a set of properties that enable PLA to connect an existing database.
Creating a Database
PLA supports both Microsoft JET and Microsoft SQL Server databases. JET database are created with this wizard. SQL Server database are created as empty database by your administrator. PLA creates the required tables when it connects by itself.
Connecting an Existing Database
To connect a JET database select "Create or Connec a Database File". To connect to a SQL Server select "Connect a Database Server".
Delete Connection Profile
A defined connection is deleted. The database itself remains intact. You may reconnect to it.
Compact Database
JET databases tend to grow. From time to time you should compact it. You need exclusive access to the file to perform compaction.
Open Database
Close

Database Connection Profiles

This list contains a list of previously created Database Connection Profiles. You can switch between different databases simply by selecting the appropriate profile in the list.

Create or Connect a Database File

Select this button to create a new connection profile for a Microsoft JET database file (MDB). To use an existing PLA database, select the appropriate file in the appearing "Select File" dialog. You can create a new database file if you enter a new file name in the "Filename" text edit field of the "Select File" Dialog.

Connect a Database Server

This option allows you to create a new connection profile using a database server.
See also: Database Manager Connect

Delete Connection Profile

Click this button to delete the currently selected connection profile.

Compact Database

This options allows you to compact the JET database described by the currently selected connection profile.
Note that using this function for non JET databases fails, since database compaction is only supported for Microsoft JET databases.

Open Database

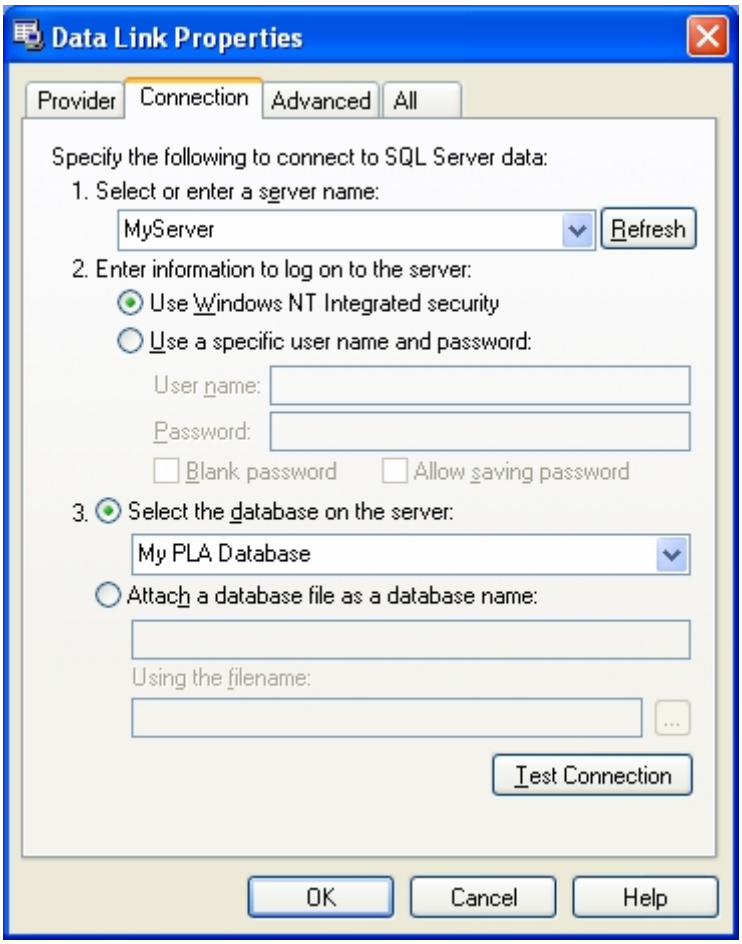
Opens the database described by the currently selected connection profile.

Close

Closes the Database Manager without switching the database connection profile.

Database Manager Connect

This dialog allows you to set up a connection to a database server.
Currently only Microsoft SQL Server 2000 or higher is supported.
The corresponding OLE DB-Provider for Microsoft SQL Server is selected automatically.
For detailed information how to set up a PLA database on a Microsoft SQL Server please refer to PLA Databases.



Server Name

Enter the name of your database server here (e.g.: MyServer). If you have multiple instances of an Microsoft SQL Server you need to enter the name of the server and the named instance separated by a backslash (e.g. MyServer\MyInstance). You can also select one of the SQL Servers in the server list.

Contact your database administrator if you are not sure about the SQL Server to be used.

Refresh

Click here to refresh the list of SQL Servers.

User Authentication Mode

Select between Windows authentication and SQL Server Authentication. If you choose SQL Server Authentication be sure to have a user name and a password on hand. It is recommended to use SQL Server Authentication and to create a "PLA-user" just for connections of the PLA system to the PLA

database. The password of the "PLA-user" is kept in confidence and only encrypted connection profiles are distributed.

Contact your database administrator if you are not sure about the authentication mode.

User Name

Enter your SQL Server user name here.
Note: This is only applicable for SQL Server authentication mode.

Password

Enter your SQL Server user password here. This information is required if you choose SQL Server Authentication. The password is stored in an encrypted form and can not be discovered by common means.
Note: This is only applicable for SQL Server authentication mode.

Blank Password

This option should be disabled if you choose SQL Server Authentication because it would be careless to use an SQL Server account without password.
Note: This is only applicable for SQL Server authentication mode.

Save Password

This option must be enabled in order to create a complete PLA database connection profile.
Note: This is only applicable for SQL Server authentication mode.

Select the Database

Enter the name of the PLA database (e.g. My PLA Database) or select the database from the database list.
Contact your database administrator if you are not sure about the database.

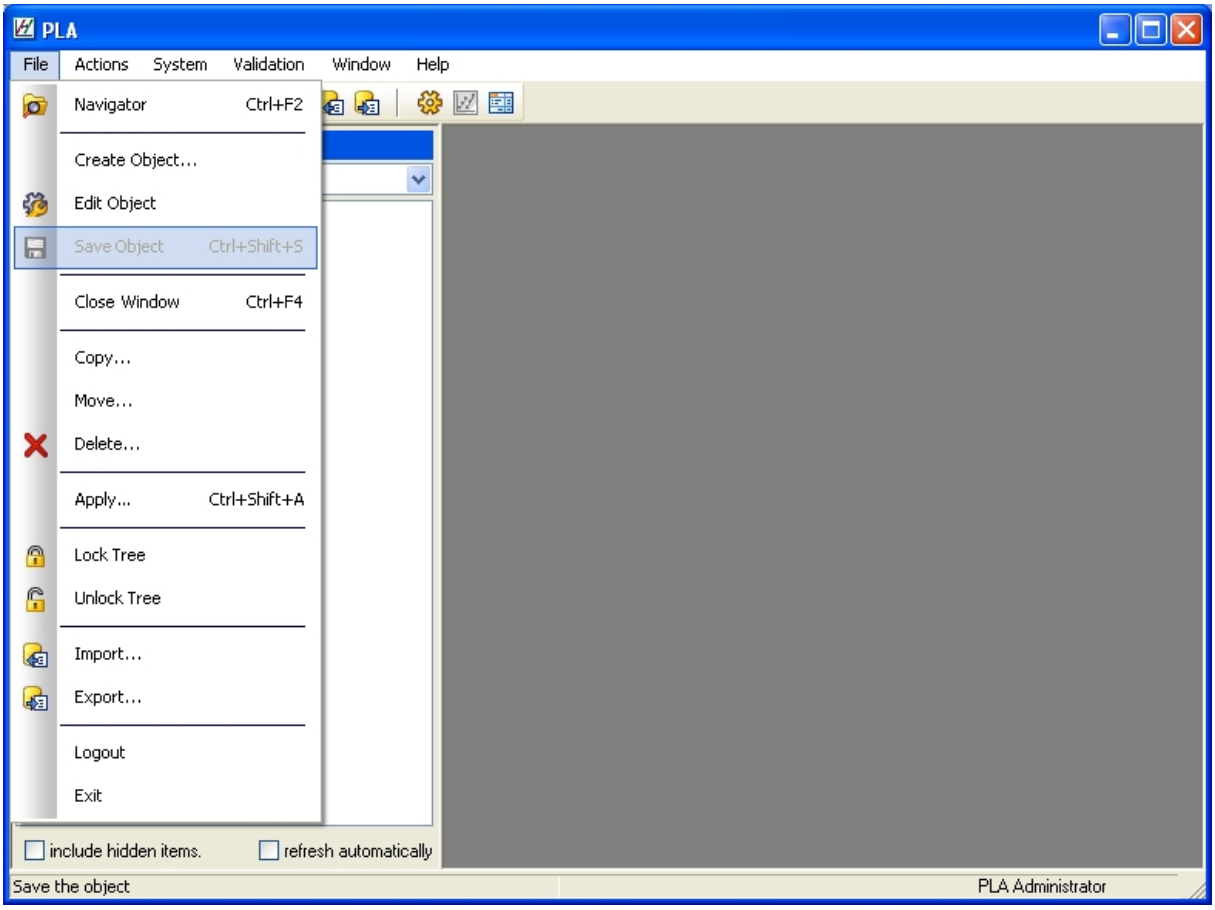
Note:
The database must already exist on the server and the provided user must have the rights to create, erase and modify database objects. Contact your database administrator for further information.

Test Connection

Click here to test the connection to your SQL Server.
If, for any reason, the test fails contact your database administrator for further guidance.

File Menu

This topic describes the File Menu of the PLA menu bar.



Navigator

Show or hide the Navigator.

Create Object

Create a new object.
See also: Create Object Dialog

Edit Object

Edit the selected object's properties and definitions.
See also: Introduction to Object Properties

Save Object

Save any changes made on the selected object.

Close Window

Closes the currently active sheet.

Copy

Copy the selected object.
See also: Copying and Moving of Objects

Move

Move the selected object.
See also: Copying and Moving of Objects

Delete

Delete the selected objects and all of it's child objects.
See also: Deleting Objects

Apply

Apply a template or project definitions to the selected object.
See also: Apply

Lock Tree

Lock the selected object and of it's descendants.
See also: Locking Objects

Unlock Tree

Unlock the selected object and of it's descendants.
See also: Locking Objects

Import

Open the import wizard to import data into PLA.
See also: Import

Export

Open the export wizard to export data from PLA into a file.
See also: Export

Logout

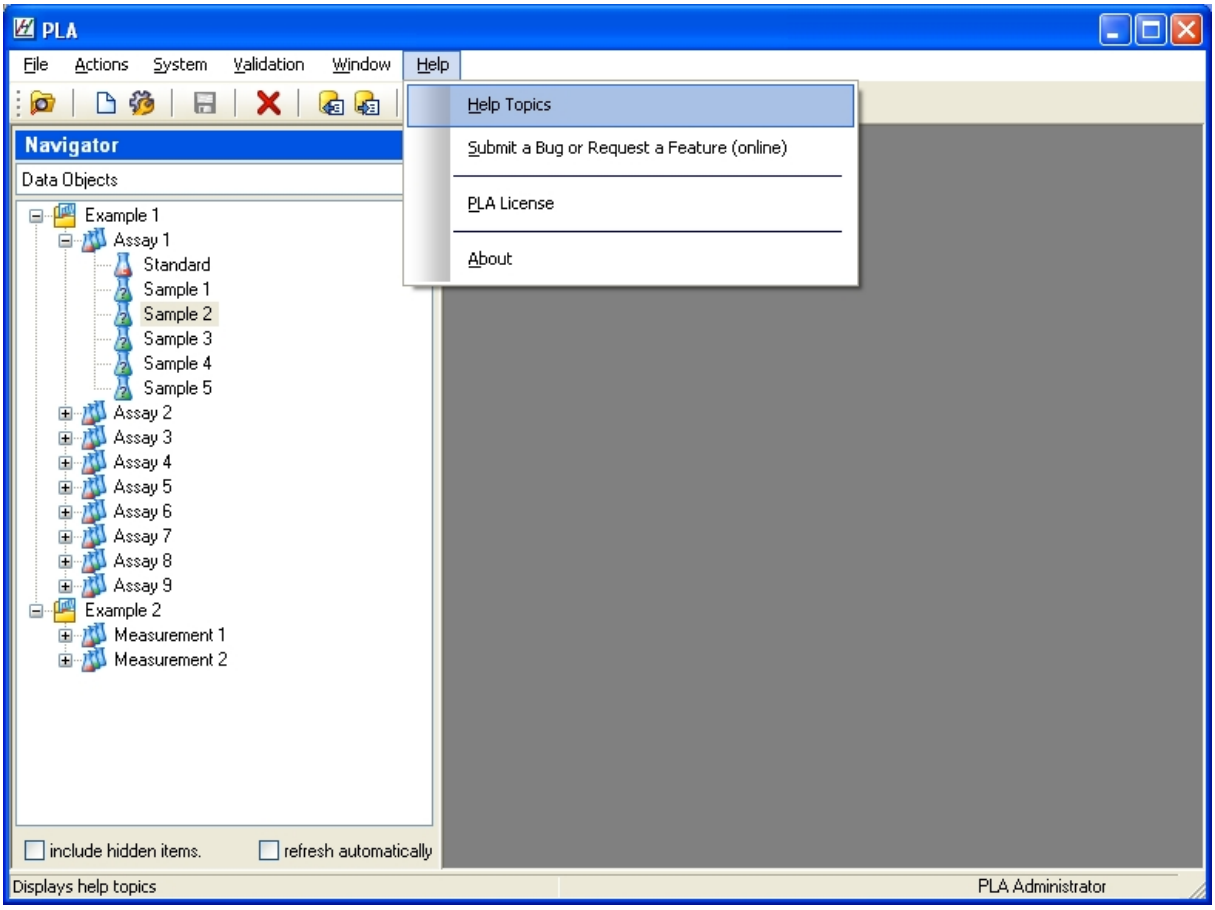
Log out of PLA. This will end your current session. You'll have to save or discard your current work. This will display the login screen.

Exit

Close PLA.

Help Menu

This topic describes the Help Menu of the PLA menu bar.



Help Topics

Open the online help of PLA.

Submit a Bug or Request a Feature

This allows you to connect to the Support Website of PLA to submit a feature request or a bug report. You will be asked whether PLA should connect you to the Support Website.

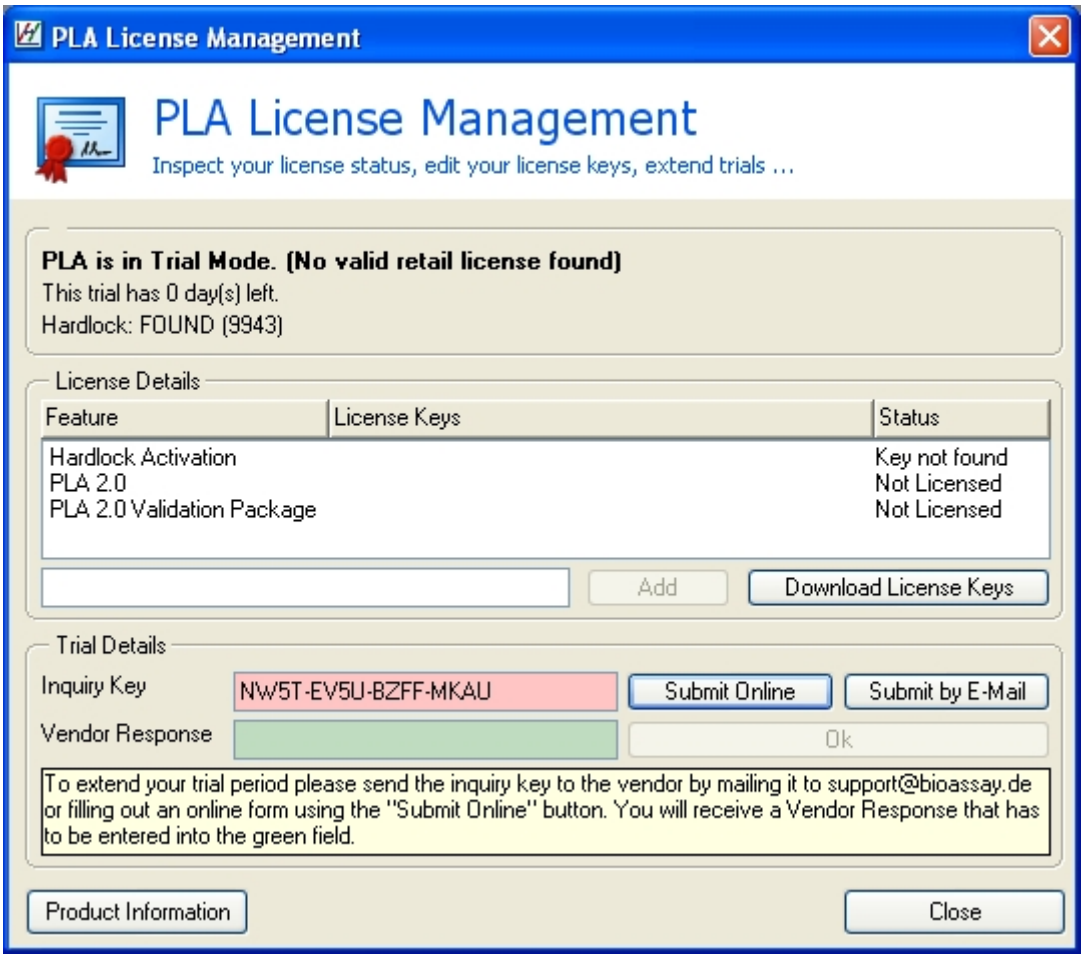
PLA License

Open the PLA License Manager.
See also: License Management

About

Open a window showing detailed information about your PLA Installation.
See also: Product Information

License Management


PLA License Management
PLA License Management
Inspect your license status, edit your license keys, extend trials ...
PLA is in Trial Mode. (No valid retail license found)
This trial has 0 day(s) left.
Hardlock: FOUND (9943)
License Details
Feature
License Keys
Status
Hardlock Activation
Key not found
PLA 2.0
Not Licensed
PLA 2.0 Validation Package
Not Licensed
Add
Download License Keys
Trial Details
Inquiry Key
NW5T-EV5U-BZFF-MKAU
Submit Online
Submit by E-Mail
Vendor Response
Ok
To extend your trial period please send the inquiry key to the vendor by mailing it to support@bioassay.de or filling out an online form using the "Submit Online" button. You will receive a Vendor Response that has to be entered into the green field.
Product Information
Close

License Status

The status of your PLA installation and the Hardlock status.

License Details

A list of Licenses with their status.

License Key

Text edit field for entering a license key manually.

Add

After having entered a license key into the License Key field, click this button to add the license.

Download License Keys

If you have an Upgrade Protection for PLA 2.0 you'll be able to download your license keys directly from our license server.
Note: This feature requires an internet connection.

Inquiry Key

This key is generated by the PLA Licensing system. It is required if you need to get an extension of your trial period.
Note: This feature applies only to the Trial Mode of PLA.

Submit Online

Submit your Inquiry Key online. This will open the PLA License Inquire page in your internet browser. You can use the form on this page to submit the query.
Note: This feature requires an internet connection.

Submit by E-mail

Submit your Inquiry Key by e-mail. This will open you mail application with a prepared mail containing the required information for a new trial key. You'd just have to press the "send" button.
Note: This feature requires an internet connection.

Vendor Response

Once you have received the response code from PLA support, you'd have to enter it into the green text field.

OK

This button will be enabled if you've entered the vendor response in the green text edit field. Pressing the button will check the entered code and activate PLA or a PLA feature.

Explanation

A short text explaining how to use the License Manager.

Product Information

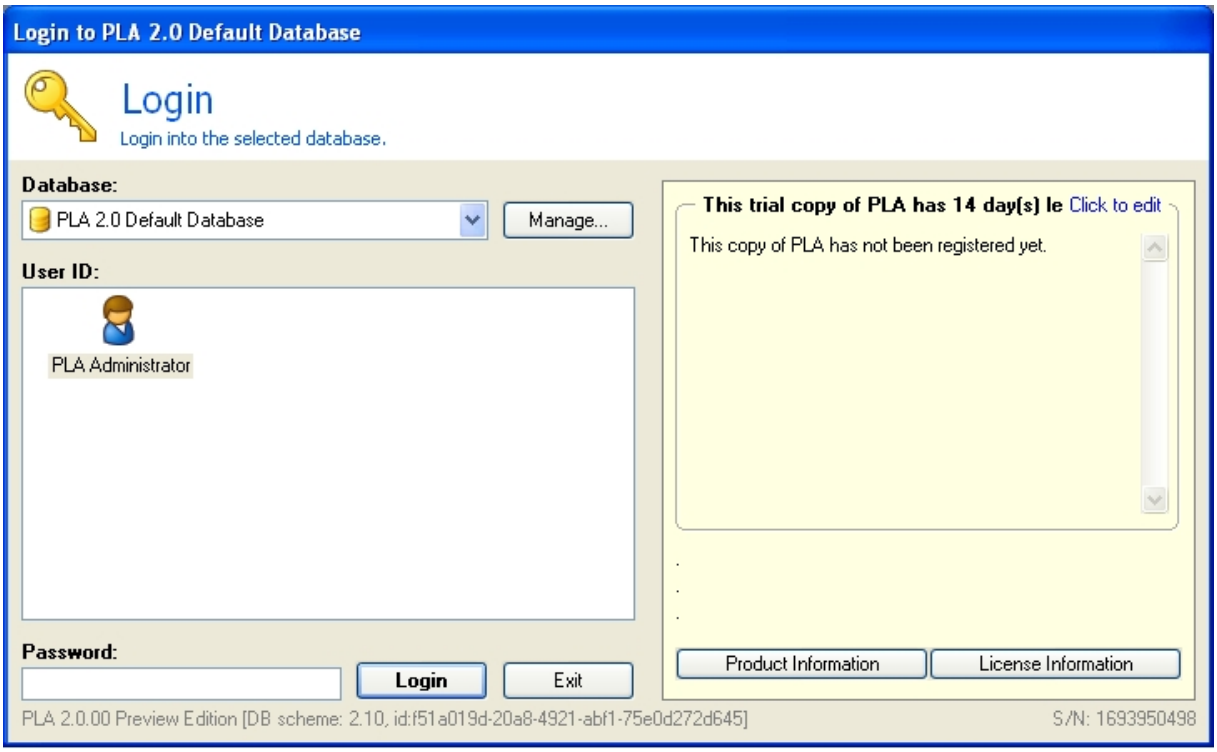
Open the Product Information Dialog.
See also: Product Information

Close

Close this dialog.

Login

The Login dialog allows you to login to a database. It provides a list of databases to choose from and means to create new database connections. Once you have selected the database, the dialog shows the registered users of this database. Select the desired user and type in your password. Then press the "Login" button to proceed.



Database

This is a list of your database connection profiles. Select the desired database connection profile. PLA tries to establish the database connection and shows an updated user id list. If for any reason PLA could not open the database, contact your IT administrator.

Manage...

Opens the Database Manager which allows you to manager your database connection profiles.

User ID

A list of users of the currently selected database. Select your user account by clicking on your user name.

Password

Enter your password here.

Login

Executes the login.

Exit

Quit PLA.

Status

Shows status information about your PLA installation.
E.g.: The remaining time of your PLA Trial.

Register

Click here to register your copy of PLA.

Info

Your registration information is shown here.

News

Shows latest news about PLA if you are connected to the internet.

Product Information

Shows information about the program.
See also: Product Information Dialogue

License Management

Opens the License Manager.
See also: License Management

Version Information

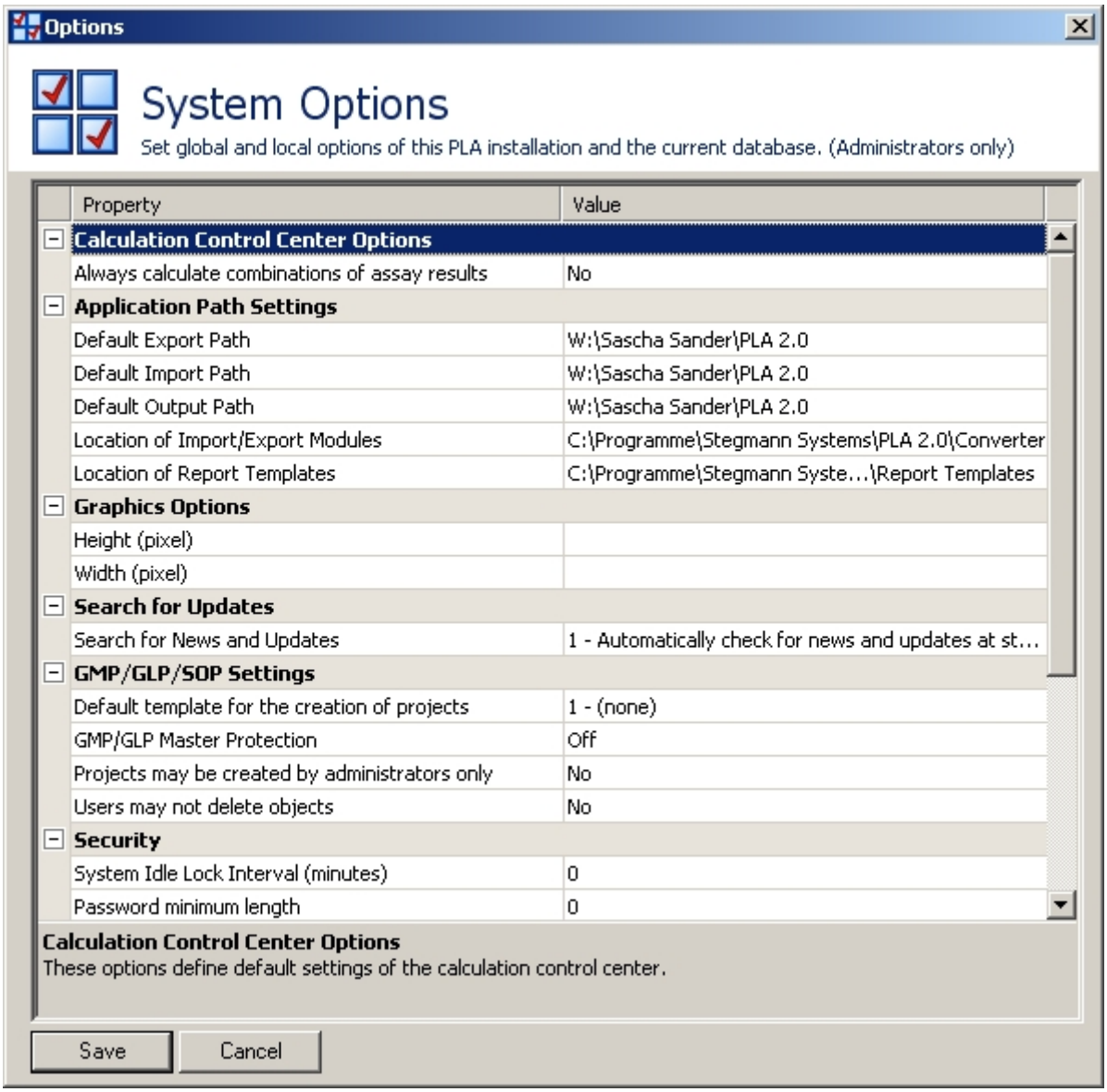
Detailed information about your PLA version for support purpose.

Serial Number

Your PLA Serial Number.

Options

This topic describes the Options dialog and all available settings.



- **Calculation Control Center Options**
  1. ***- Always calculate combinations of assay results***
     1. If set to yes the defined groups of combination of assay results are calculated by default.
     2. Possible Values: No
        Yes
        Default value: No
     3.
- **Application Path Settings**

1. ***- Default Export Path***
    1. Defines the default path to where the export wizard shall export the data to.

2. ***- Default Import Path***
    1. Defines the default path to where the import wizard shall import the data from.

3. ***- Default Output Path***
    1. Defines the default path to where the created reports or certificates shall be stored.

4. ***- Location of Import/Export Modules***
    1. Defines the path, where PLA Import and Export modules are stored.

5. ***- Location of Report Templates***
    1. Defines the path, where your PLA Report Templates are stored.
    2.

- **Graphics Options**
    1. ***- Height (pixel)***
        1. Defines the height of the image in pixel created when saving the graph from the Data Explorer to an image file.
        2.

            Possible Values: 100 - 2.048
            Default value: 600

        3.
    2. ***- Width (pixel)***
        1. Defines the width of the image in pixel created when saving the graph from the Data Explorer to an image file.
        2.

            Possible Values: 100 - 2.048
            Default value: 800

    3.
- **Search for Updates**
    1. ***- Search for News and Updates***
        1. Defines how PLA should check for News or Program updates.
        2.

            Possible Values: 1 - Automatically check for news and updates at startup
            2 - Allow manual check for news and updates at startup
            3- Disable check for news and updates
            Default value: 1 - Automatically check for news and updates at startup

    2.
- **GMP/GLP/SOP Settings**
    1. ***- Default Template for the creation of projects***
        1. Defines the default template for the creation of projects.
        2.

            Possible Values: 1 - (none)
            2..n - A list of your templates
            Default value: 1 - (none)

    2.
    3. ***- GMP/GLP Master Protection***

1. Enable or disable GMP/GLP Master Protection. Enabling this option overrides all set GMP protections.
2.

Possible Values: Off
On
Default value: Off

4.

5. - Projects may be created by administrators only

1. If this option is enabled, only administrators are allowed to create projects.
2.

Possible Values: No
Yes
Default value: No

6.

- Users may not delete objects

1. If this option is enabled, standard users are not allowed to delete projects or assays.
2.

Possible Values: No
Yes
Default value: No

7.

- **Security**

1. - System Idle Lock Interval

1. This specifies the time interval (in minutes), after which PLA is locked if no user action occurred. By specifying the value 0, the automatic lock is disabled.
2.

Possible Values: 0 - 1540
Default value: 0

2.

3. - Password minimum length

1. Specifies the minimum number of characters a password must have.
2.

Possible Values: 0 - 25
Default value: 0
Recommended Value: 8

4.

5. - Password minimum number of special characters

1. Specifies the minimum number of special characters a password must contain. A special character is one of "0123456789,.-;:_#'+*~\?{}[]!"§$%&/()=<>"
2.

Possible Values: 0 - n
Default value: 0

6.

- Password maximum age

1. Specifies the maximum age of a password in days. If the age for a password has been reached. The user will be asked to change it. By setting this option to 0 you disable it.
2.

Possible Values: 0 - n
Default value: 0

7.

8. - Password warning age

1. Specifies the warning age of a password in days. If the age for a password has been reached. The user will be notified that his password will expire. By setting this option to 0 you disable it.
2.

Possible Values: 0 - n
Default value: 0

9.

- ***Password minimum age***

1. Specifies the minimum age of a password in days. The password cannot expire until the minimum age is reached.
2. By setting this option to 0 you disable it.
3.

Possible Values: 0 - n
Default value: 0

10.

- ***Password age expiry blocks***

1. If this option is set to true, a user account is blocked if its password is expired. Otherwise the user will be asked to change an expired password upon next login.
2.

Possible Values: false
true
Default value: false

11.

12. - Password maximum failures

1. This option defines the number of failed login attempts until the corresponding account is blocked. Setting this value to 0 disables this feature.
2.

Possible Values: 0 - n
Default value: 0

13.

14. - Password failure grace interval

1. This option defines how long (in minutes) an account will be blocked if the number of login attempts exceed the maximum number of password failures. Setting this value to 0 means forever.
2.

Possible Values: 0 - n
Default value: 0

15.

16. - Password history length

1. This options specifies the password history length. PLA stores a list of the specified length of old passwords for each account. A new password will be rejected if it matches an entry of the list.
2. Specifying 0 will set the password history length to unlimited, meaning that a new password must not match any password which has been used earlier by this account.
3.

Possible Values: 0 - n
Default value: 0

17.

- Password list of invalid passwords

1. A list of passwords which must not be used as password, separated by semicolon. This list applies to all accounts and prevents the usage of simple passwords like "assay".

- **Electronic Signatures**

1. - Signatures may be removed by

1. Defines who is allowed to remove electronic signatures from objects.
2.

Possible Values: 1 - admins only
2 - the signer
3 - everyone
Default value: 2 - the signer

2.

3. - List of pre-defined comments for electronic signatures

1. A semicolon separated list of pre-defined comments for electronic signatures.

- **Navigator Defaults**

1. - Autorefresh Interval

1. Defines the number of seconds to elapse until a navigator refresh occurs.
2.

Possible Values: 5 - 3.600
Default value: 30

2.

3. - Autorefresh Navigator

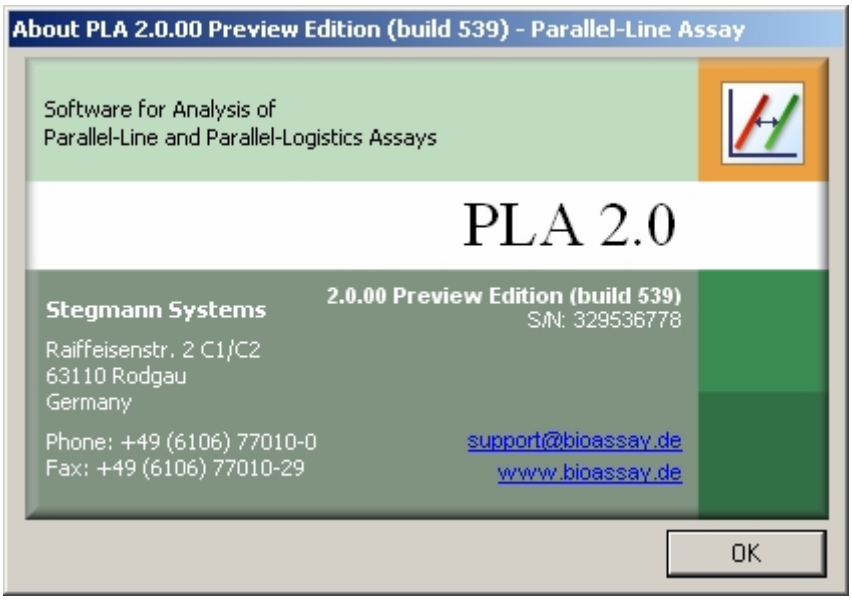
1. Defines whether the navigator is refreshed automatically. Only useful in multi user environments.
2.

Possible Values: No
Yes
Default value: No

3.

Product Information

This dialog shows detailed information about your PLA Installation.



Postal Address

The vendors postal address.

Phone / Fax

The vendors telephone and fax number.

Version

The (detailed) version number of your PLA installation.

Serial Number

Your PLA serial number.

www.bioassay.de

Open the products Website in your default web browser.

support@bioassay.de

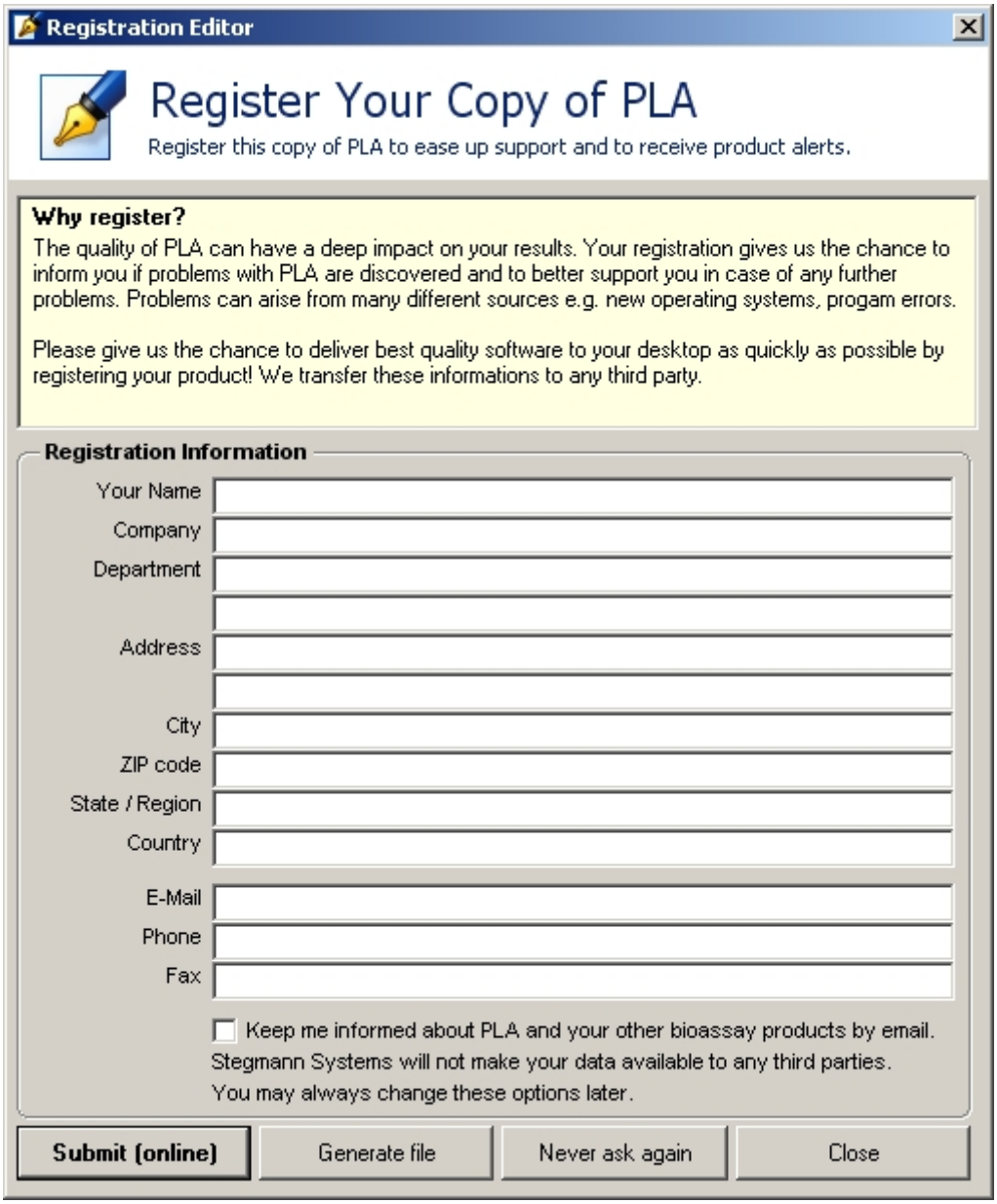
Opens your default mail client allowing you to write an e-mail to the support.

OK

Close this dialog.

Register Your Copy of PLA

How to use the registration dialog.


Registration Editor
Register Your Copy of PLA
Register this copy of PLA to ease up support and to receive product alerts.
Why register?
The quality of PLA can have a deep impact on your results. Your registration gives us the chance to inform you if problems with PLA are discovered and to better support you in case of any further problems. Problems can arise from many different sources e.g. new operating systems, progam errors.
Please give us the chance to deliver best quality software to your desktop as quickly as possible by registering your product! We transfer these informations to any third party.
Registration Information
Your Name
Company
Department
Address
City
ZIP code
State / Region
Country
E-Mail
Phone
Fax
Keep me informed about PLA and your other bioassay products by email.
Stegmann Systems will not make your data available to any third parties.
You may always change these options later.
Submit (online)
Generate file
Never ask again
Close

Why register?

This is a short statement explaining why you should register your copy of PLA.

Your Name

Enter your name into this field.

Company

Enter the name of your company here.

Department

Enter the name of your department here.

Address

Enter the address of your company here.

City

Enter your city into this field.

Zip code

Enter the corresponding zip code here.

State / Region

Enter your state or region here.

Country

Enter your country here.

E-mail

Enter your e-mail address here.

Phone

Enter your or your company's phone number here.

Fax

Enter your or your company's fax number here.

Keep me informed about PLA and your other bioassay products by email.

Enable this option if you want to receive latest information about PLA and other bioassay products of Stegmann Systems.

Privacy statement

A statement explaining to you that your data will not be made available to any third party.

Submit (online)

Submit your registration online. PLA transmits the data entered above to the Stegmann Systems user database.
Note: This feature requires an internet connection.

Generate file

PLA generates a file which you can print / fax or send via Mail.

Never ask again

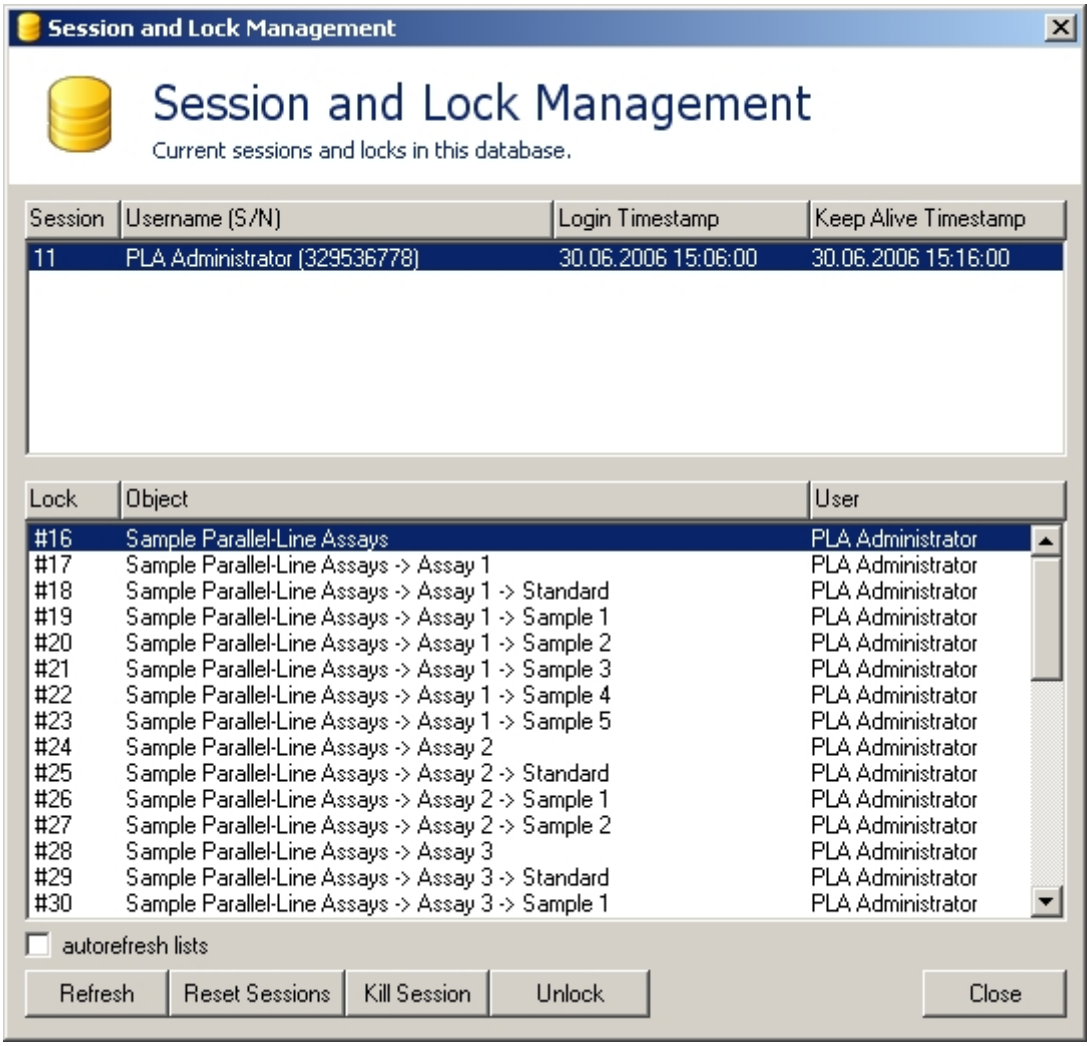
Closes this dialog. PLA won't ask you again for registration. However, you can open this dialog again by clicking the "Click to edit" hyperlink on the Login Dialog.

Close

Closes this dialog. You will be asked again to register upon next startup.

Session & Lock Management

This dialog allows you to manage all active sessions of a PLA database and their corresponding locks.


Session and Lock Management
Session and Lock Management
Current sessions and locks in this database.
Session
Username (S/N)
Login Timestamp
Keep Alive Timestamp
11
PLA Administrator (329536778)
30.06.2006 15:06:00
30.06.2006 15:16:00
Lock
Object
User
#16 Sample Parallel-Line Assays PLA Administrator
#17 Sample Parallel-Line Assays -> Assay 1 PLA Administrator
#18 Sample Parallel-Line Assays -> Assay 1 -> Standard PLA Administrator
#19 Sample Parallel-Line Assays -> Assay 1 -> Sample 1 PLA Administrator
#20 Sample Parallel-Line Assays -> Assay 1 -> Sample 2 PLA Administrator
#21 Sample Parallel-Line Assays -> Assay 1 -> Sample 3 PLA Administrator
#22 Sample Parallel-Line Assays -> Assay 1 -> Sample 4 PLA Administrator
#23 Sample Parallel-Line Assays -> Assay 1 -> Sample 5 PLA Administrator
#24 Sample Parallel-Line Assays -> Assay 2 PLA Administrator
#25 Sample Parallel-Line Assays -> Assay 2 -> Standard PLA Administrator
#26 Sample Parallel-Line Assays -> Assay 2 -> Sample 1 PLA Administrator
#27 Sample Parallel-Line Assays -> Assay 2 -> Sample 2 PLA Administrator
#28 Sample Parallel-Line Assays -> Assay 3 PLA Administrator
#29 Sample Parallel-Line Assays -> Assay 3 -> Standard PLA Administrator
#30 Sample Parallel-Line Assays -> Assay 3 -> Sample 1 PLA Administrator
autorefresh lists
Refresh
Reset Sessions
Kill Session
Unlock
Close

Sessions

A list of active sessions.

Locked Objects

A list of locked objects of the currently selected session.

Autorefresh lists

If checked, both lists will refresh automatically.

Refresh

Click this button to refresh both lists manually.

Reset Sessions

Removes outdated sessions from the PLA databases. No active sessions are touched.
Note: PLA removes outdated sessions automatically. Usually there is no need to manually remove them.

Kill Session

Kill the selected session. The session is deleted and all locks of this session are removed. This is useful if there is an invalid session entry which hold locks on objects.
Note: Use this option with caution! Invalid session entries are removed automatically after two hours.

Unlock

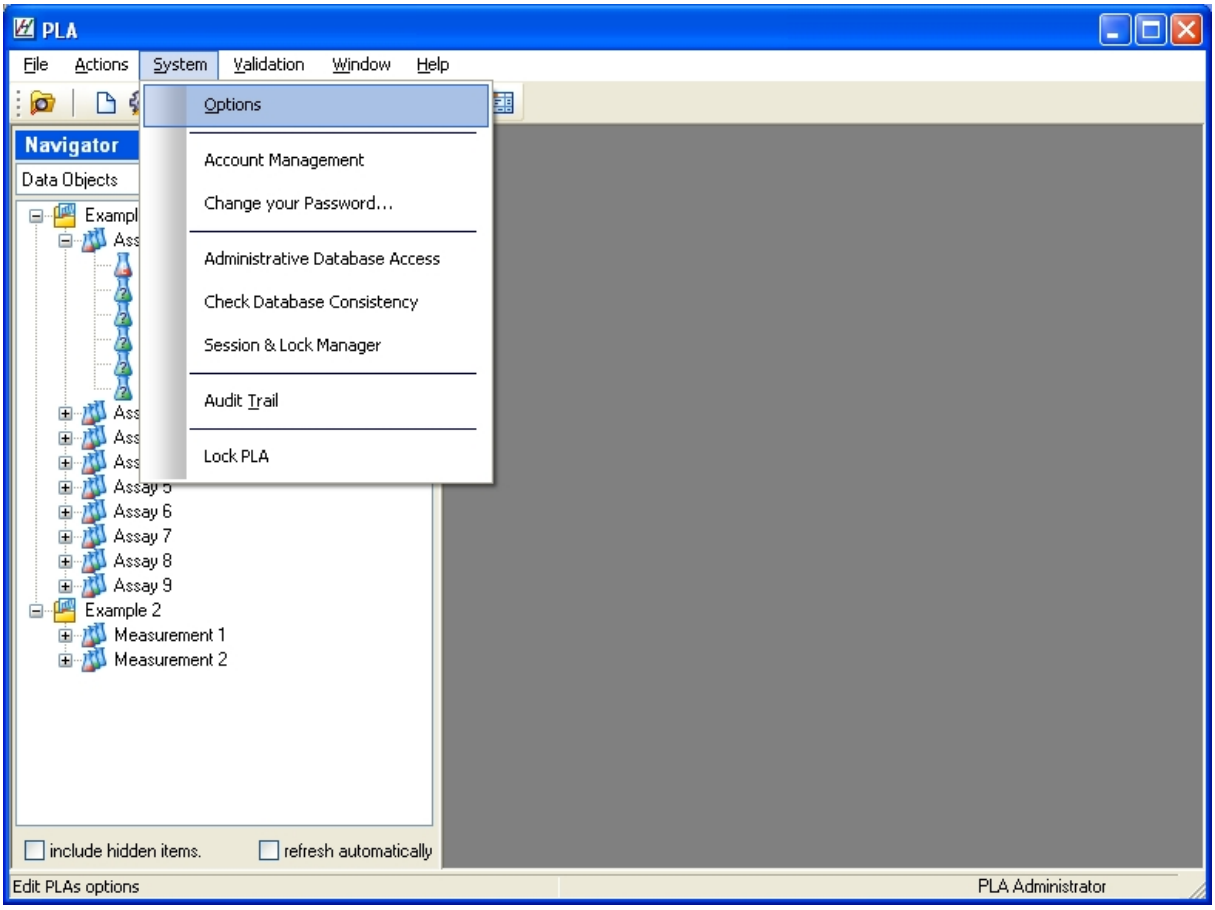
Remove the selected lock.

Close

Close this dialog.

System Menu

This topic describes the System Menu of the PLA menu bar.



Options

Open the Options Dialog to modify the configuration of PLA.
See also: Options Dialog

Account Management

This options allows you to manage the PLA user Accounts.
See also: Account Management

Change your Password

This option allows you to change your password.
See also: Change your password

Administrative Database Access

This option allows you to en- or disable the administrative database access for database maintenance.
See also: Database Maintenance

Check Database Consistency

Perform a database consistency check.

Session & Lock Manager

Open the Session & Lock Manager.
See also: Session & Lock Management

Audit Trail

Open the Audit Trail Dialogue for the selected object.
See also: Audit Trail Dialogue

Lock PLA

Lock your PLA Session.
You will need to enter your password to unlock the session.

System Locked

This dialog is shown to you after you have logged your PLA Session manually via the System Menu or after your session has been locked automatically, because you didn't work with PLA within the in the Options specified time period.

Current User

The name of the user, who's session is locked.

Password

Type the password for the user into this field.
Remember that passwords are case-sensitive.

Unlock

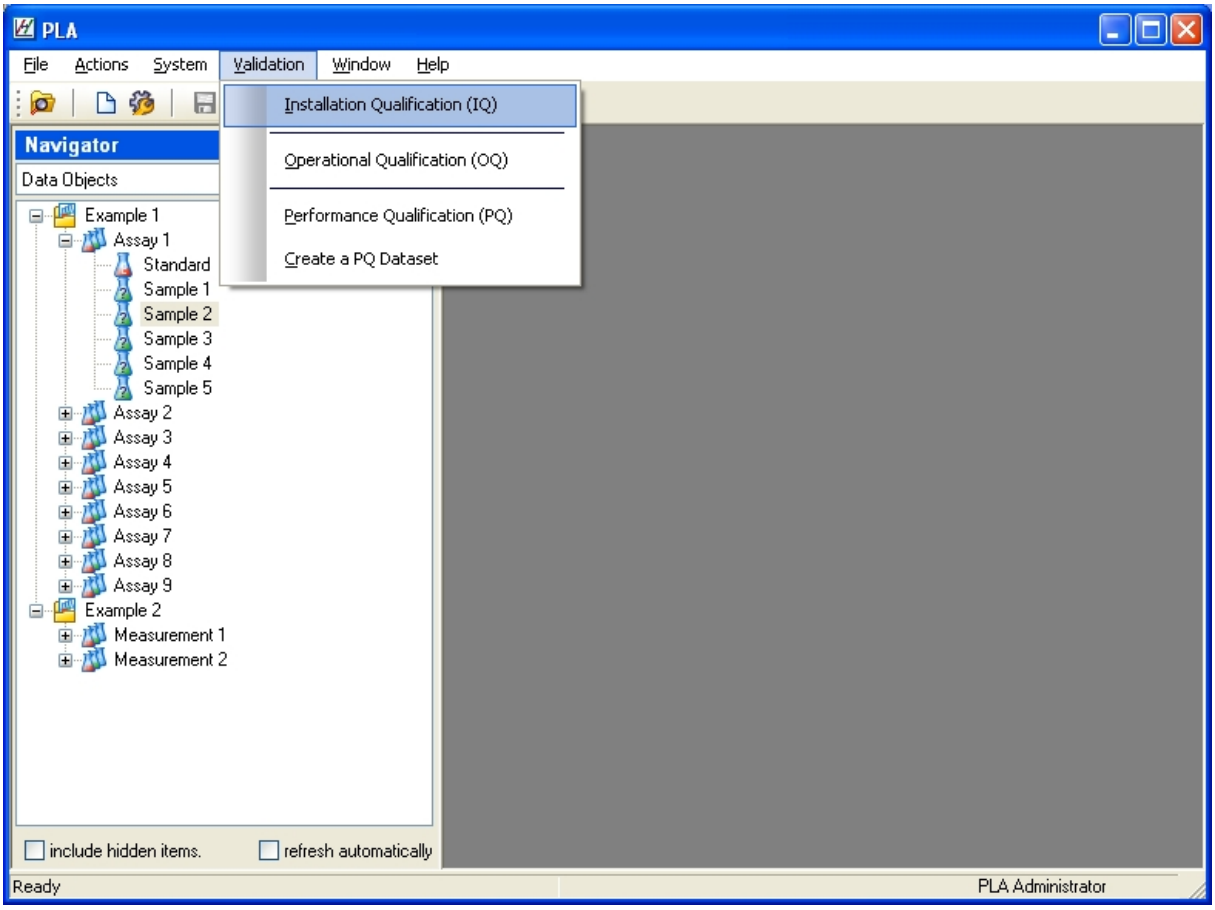
Click here to unlock the PLA session after having entered the correct password into the corresponding field.

Close PLA

Click here to close PLA. You do not need to provide a password.
You will be asked whether you are sure about closing PLA, since all changes will not be saved.

Validation Menu

This topic describes the Validation Menu of the PLA menu bar.



Installation Qualification

Opens the Installation Qualification (IQ) Dialog.
See also: Installation Qualification

Operational Qualification

Opens the Operational Qualification (OQ) Dialog.
See also: Operational Qualification

Performance Qualification

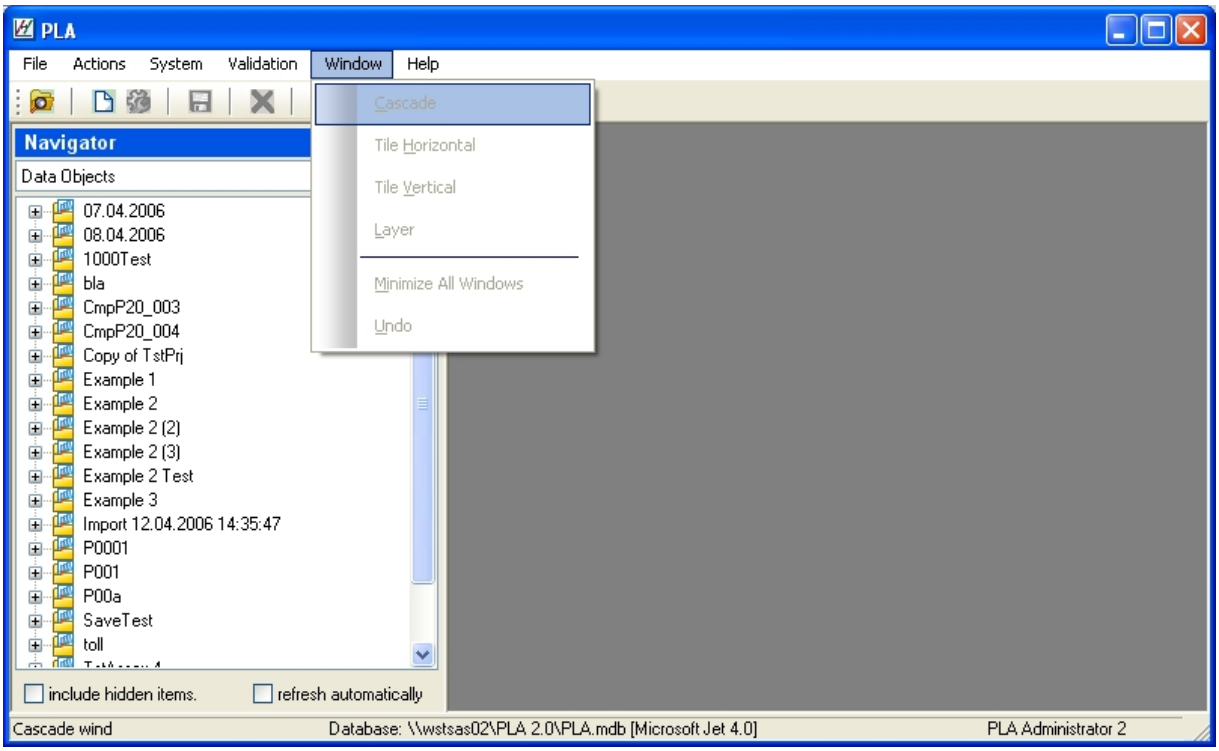
Opens the Performance Qualification (PQ) Dialog.
See also: Performance Qualification

Create a PQ Dataset

Opens a dialog allowing you to create a PQ Dataset which can be used to perform the PQ on antoher machine running PLA.
See also: Performance Qualification

Window Menu

This topic describes the Window Menu of the PLA menu bar. It allows you to arrange your windows in PLA.



Cascade

Cascade all open windows.

Tile Horizontal

Tile the view horizontally.

Tile Vertical

Tile the view vertically.

Layer

Layer all open windows above each other.

Minimize All Windows

Minimize All Open Windows.

Undo

Rest the the last set alignment and reset the windows to their previous view.

PLA 2.0 vs. PLA 1.2

PLA 2.0 is the successor of the leading PLA 1.2 System. PLA 2.0 has been re-coded in many sections. The system design has been refreshed and a variety of options have been added.

If you are currently using PLA 1.2 the following notes may be relevant for you.

No Interaction of PLA 1.2 and PLA 2.0

You may install and use PLA 1.2 and PLA 2.0 on the same computer system without any restrictions. Both versions do not influence each other. You may install and un-install them in any order.

Data Migration

The installation of PLA 2.0 does not touch your current PLA 1.2 data. If you want to migrate your data you have to export them in PLA 1.2 and then import the corresponding data file in PLA 2.0.

PLA 1.2 / PLA 2.0 Licensing

If you have purchased a license of PLA 1.2 and obtained your license of PLA 2.0 with the PLA Upgrade Protection or via an PLA Product Upgrade your are entitled to use both versions on the same computer system. You must not install both versions on different computers.

Note: This licensing feature is only available in the per-seat licensing mode. PLA 1.2 does not support floating licenses.

Stegmann Systems

Stegmann Systems (formerly known as Stegmann Systemberatung) has been founded 1996 and is located in Germany.

Stegmann Systems
Raiffeisenstr. 2 C1 / C2
63110 Rodgau
Germany

Phone: +49 (0)6106 77010-0
Fax: +49 (0)6106 77010-29

E-Mail: support@bioassay.de
Website: www.bioassay.de

Support Website: support.stegmannsystems.com

System Requirements

Your computer needs to meet the system requirements in order to run PLA. Please remind that you'll need administrative rights to install PLA.

- **System Requirements:**
  - Intel Pentium III (or compatible) Processor with 1Ghz or higher
  - 512 Megabytes of System Memory (RAM) at least
  - 250 Megabytes of free Hard disk space
  - Microsoft® Windows 2000, Microsoft Windows XP ®

- **Recommended System:**
  - Intel Pentium IV (or compatible) Processor with 2Ghz
  - 1 Gigabyte of System Memory (RAM)
  - 500 Megabytes of free Hard disk space
  - Microsoft Windows XP ®

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Stegmann Systems (Stegmann Systemberatung)
Raiffeisenstr. 2
63110 Rodgau
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Version dated 2006-08-22